Madras University Historical Series—No. 12 bis

General Editor :

PROFESSOR K. A. NILAKANTA SASTRI

ECONOMIC CONDITIONS IN SOUTHERN INDIA

(1000—1500 A.D.)

VOL. II

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(1000—1500 A.D.)

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VOL. II



UNIVERSITY OF MADRAS
1936

Thesis approved for the Degree of Doctor of Philosophy.

Thompson & Co., Ltd., Printers, Madras.

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A Survey of Industries

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Sources.

It has been pointed out that the evidence for a survey of our industries in the middle ages is comparatively meagre: the few notices of travellers, some inscriptions bearing on taxes and tolls and the principles laid down in the commentaries on legal texts which, according to their authors, should govern the relation between the employer and the artisan almost exhaust our sources of information on this topic. The information supplied by them is not exhaustive. The raw materials of industry, the processes of production, the conditions of labour and the relation between the employer and the employed, which obtained in practice, are all either partly or completely hidden from our view. What in fact we are able to get from contemporary evidence is treated here under two main heads: i. The main industries ii. The system of production. Adopting a rough classification of the main industries into handicrafts, mines, and fisheries, and agricultural manufactures, we deal first with the factors bearing on the demand for each of these groups of industries; next an attempt is made to indicate the main centres of the industries, the

Method of treatment.

raw materials and the area from which such raw materials were drawn, the processes of production (in a few instances) and the quality of the product. Finally the system of production or systems of production—for there were existing side by side more than one system—are taken up, wherein an attempt is also made to show the results such systems had on the quantity as well as the quality of production.

(2) THE MAIN INDUSTRIES

i. Handicrafts—1. Metal industries—Articles intended for use mainly (a) In temples—(b) In Court—(c) For military purposes (d) In households—2. Textiles—Tailoring—3. Woodwork: furniture—Wheeled carriages—Shipbuilding—4. Leather goods—5. Pottery—ii. Mines, minerals and fisheries—Import from without—Internal production—Diamond—False diamonds—Pearl fisheries—Kinds of pearl—Gold—Iron—Sulphur, copper and salt—iii. Agricultural industries—Products of the cocoanut—Food products—Dyeing—Oil—Cane-work.

i. Handicrafts.

The group of industries we have termed handicrafts comprised metal industries, textiles, woodwork, leather industries and pottery. The division is adopted as a convenient one for describing industries connected with the working up of metals, fibres, wood, leather and earth.

1. Metal industries.

Taking up, first, metal industries—the working up of gold, silver, iron, copper, brass, zinc and tin into articles of daily use—it must be pointed out that the first two were worked up either alone or in combination with

precious stones, coral, ivory, etc., all being called by the name "jewellery". We may now describe metal industries under four main heads, roughly marked by the source of demand: i. intended for use mainly in temples ii. required mainly by the existence of a wealthy court iii. military iv. meant for general household use. These are not all exclusive, for some of the articles of general household use were also used in the temples, as well as by the upper nobility; but the classification is adopted to indicate the articles which were largely demanded by the agency referred to in each sub-division.

Articles intended for use mainly (a) in temples.

Of the first class were the different kinds of presents offered by kings and the wealthier classes in general to temples, the different kinds of fruits manufactured out of heaps of gold such as areca-nuts, jack-fruits, plantains, cocoanuts and mangoes or again golden images of Śeṣa, of garuḍa, a golden arch, a pearl garland, a canopy of pearls, a golden car, a golden trough, a golden under-garment, a golden aureola, a golden pedestal, a golden armour, golden vessels, a golden throne, etc., presented by Sundara Pāṇḍya in 1257 A.D. to the God at Śrīrangam in Trichinopoly.[1] Images of gold and silver occur frequently in inscriptions;[2] a golden pavilion is another popular present.[3] Jewellery of thirteen kinds is men-

[1] *Ep. Ind.*, III, pp. 15—17.

[2] 444 of 1918, *South Ind. Inscr.*, II, 32 and 43.

[3] *Ponnin-tirumaṇḍapam*—669—670 of 1919.

tioned in an inscription :[4] *kālvaḍam, pāḍagam, tirucchari, muga-kkāṟai, mulaittaḍam, hāram, mangiliyam, pattakkāṟai, tōḍu, vāḷi, pañcaśaram, kavaḍam* and *tāḷvaḍam.* Indeed, according to the Government Epigraphist, some ornaments mentioned in inscriptions have no representatives in modern South Indian jewel shops.[5] One such ornament is called *Śōnagacciḍukkinkūḍu.*

The precious stones used in the manufacture of such jewellery call for some mention. Necklaces of nine kinds of gems are mentioned in the *Kalingattupparaṇi,*[6] such as *paḍugan, kaḷḷippū, kokkuvāy* and *śavakkam.*[7]

The variety of articles including jewellery used in South Indian temples is specified in our inscriptions with a wealth of detail rarely observable elsewhere. The study of a few,[8] relating to the Tanjore temple, will give us some idea of the large part played by the temple in developing handicrafts:—armlet, arm-rings, aureola, (models of) banyan tree, bead, bowl, bracelet, (metal) bull, collar, *cāmara,* crown, cup, ear-ring, foot-ring, front plate, gold flower, girdle, garland, handle, lotus, lotus seat, necklace, neckring, *pancaśari,* pearl ornament, pearl bracelet, peacock feather, round beads, receptacle for sacred ashes, ring, *saptaśari,* skull,

[4] 720 of 1916—1239 A.D.

[5] Venkayya in *South Ind. Inscr.*, II, p. 19 and no. 93.

[6] Kanakasabhai Pillai, *Kalingattup-parani, Ind. Ant.*, XIX, p. 333.

[7] *South Ind. Inscr.*, II, 2, para 32.

[8] *South Ind. Inscr.*, II, 34, 36, 38, 39, 42, 43, 46, 50.

spittoon, spiral, string of beads for the marriage badge, spear, scimitar, (gold) snake, (gold) tiger, *triśaram*, an ornament of three strings, waist band and wallet.[9]

Such articles appear to have been produced either at the instance of the temple[10] or the devotees. The former was possible because in many instances, temples appear to have had artisans under their employ.[11]

(b) In Court.

The articles in demand by the existence of a court and the aristocracy are best illustrated with reference to the court of Vijayanagar of which detailed contemporary descriptions have come down to us through Nuniz, Paes, Conti, and 'Abdu-r Razzāk. 'Abdu-r Razzāk speaks[12] of the throne of His Majesty which was 'of a prodigious size, made of gold inlaid with beautiful jewels, and ornamented with exceeding delicacy and art'. It was also nowhere excelled in the other kingdoms of the earth! The same chronicler admired the embroidered sofas, the ear-rings of precious stones, and 'the collar composed

[9] *śri-bāhu-valaya, tirukkaikkāṛai, prabhai, ālavṛkṣa, rudrākṣa, maṇḍai, vaḷaiyil, ṛṣabha, kāṛai, veṇ-śāmarai, srīmuḍi, vaṭṭil, tirukkudambai* and *tōḍu, tiruvaḍikkāṛai, vīrapaṭṭa, tiruppoṟpū, tiruppaṭṭigai, tirumālai, kai, padmam,* lotus seat, *tārvaḍam* and *kaṇṭikā, paṭṭaikkāṛai, pañcaśari, śrī-canda, sūḍagan, taṛai, tiraḷ-maṇi-vaḍam, kuṟu-maḍal, mōdiram, saptaśari, kapāla, paḍikkam, tiru, tāli-maṇi-vaḍam, śūla, kuṟṟ-uḍaivaḷ, pāmbu, puli, triśaram, udara-bandhana, pokkaṇan.*

South Ind. Inscr., II, 34, 36, 38, 39, 42, 43, 46 and 50. The manufacture of fine ornamental brass and bronze work in the shape of many branched lamps and images of god has become almost a lost art, though it lingers on in some localities.

[10] 669, 670 of 1919.

[11] 208 of 1919.

[12] 'Abdu-r Razzāk, Elliot, *History*, IV, pp. 120, 113.

of pure pearls of regal excellence'. The description given by Paes[13] is fuller. According to him they had very rich and fine silk cloths; on the head they wore high caps which they called *collāes,* and on these caps they wore flowers made of large pearls; "collars on the neck with jewels of gold very richly set with many emeralds and diamonds and rubies and pearls; and besides this many strings of pearls, and others for shoulder-belts; on the lower part of the arms many bracelets, with half of the upper arm all bare, having armlets in the same way all of precious stones; on the waist many girdles of gold and of precious stones, which girdles hang in order one below the other, almost as far down as half the thigh; besides these belts they have other jewels; and many strings of pearls round the ankles, for they wear very rich anklets even of greater value than the rest. They carry in their hands vessels of gold each as large as a small cask of water; inside these are some loops made of pearls fastened with wax, and inside all this a lighted lamp".

Elsewhere[14] we are told of ivory used 'in very cunning work, inlaid and turned articles such as bracelets (bangles), sword-hilts, dice, chessmen and chess-boards'; for there were many skilful turners who made all these, also 'many ivory bedsteads very cunningly turned, beads of sundry kinds, black, yellow, blue and red and many other colours'. 'Here too are many workers in stones, and makers of false stones and pearls

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[13]Paes, Sewell, *A Forgotten Empire*, p. 273.

[14]Barbosa, *An Account*, I, pp. 142-44.

of divers sorts which appear to be real; also very good goldsmiths who do very fine work. They also make here very beautiful quilts and testers of beds finely worked and painted'.

Bidar was celebrated for the manufacture of a kind of metal-ware which was styled Bidri-work. The metal was composed of an alloy of copper, lead, tin and zinc. It was worked up into articles of most elegant designs and inlaid with silver and occasionally gold. The articles manufactured were chiefly vases, hookahs, basins, etc.[15]

It is permissible to assume that such industries catered, in the main, to a small percentage of the population living in and around the capitals of ruling princes or petty chiefs though in certain localities, and with regard to some products, there was wider custom:—'All the inhabitants of the country, whether high or low, even down to the artificers of the bazaar, wear jewels and gilt ornaments in their ears and around their necks, arms, wrists and fingers'.[16]

(c) For military purposes.

Of metal ware chiefly for military purposes there were made bucklers, bows and arrows, swords and daggers;[17] sword hilts are said to have been inlaid with ivory,[17a] though we have no account of where or how they were produced. Some idea of the nature of production

[15]Gribble, *A History*, I, p. 134.

[16]'Abdu-r Razzāk, Elliot, *History*, IV, p. 109.

[17]John of Montecorvino, Yule, *Cathay*, III, p. 64.

[17a]Barbosa, *An Account*, I, pp. 141—44.

under this head may be gathered from the picturesque account given by Paes:[17b] "The cavalry were mounted on horses fully caparisoned, and on their foreheads plates, some of silver but most of them gilded.....Some of the men with the gilded plates had them set with many large precious stones, and on the borders of lace-work of small stones. ......These tunics are made of layers of very strong raw leather, and furnished with other iron (plates) that make them strong; some have these plates gilded both inside and out, and some are of silver........ They wear on the neck gorgets (*cofos*) all gilded, others made of silk with plates of gold and silver, others of steel[18] as bright as a mirror. At the waists they have swords and small battle-axes, and in their hands javelins with the shafts covered with gold and silver...... Then, turning to the troops on foot, ...you will see......shield-men with their shields, with many flowers of gold and silver on them...... others all covered with silver leaf-work beautifully wrought......and their swords so richly ornamented .... Of the archers, I must tell you that they have bows plated with gold and silver......daggers at their waists and battle-axes, with the shafts and ends of gold and silver". And if we further reckon the fact that the

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[17b]Paes, Sewell, *A Forgotten Empire*, pp. 275—77.

[18]The extent of perfection to which the iron-smiths had developed their art in the days when skilled artisans were specially employed by Indian princes at their palaces is shown by the magnificent collection of arms from the Tanjore palace preserved in the Madras Museum. The collection includes three magnificent damascened elephant goads (ancus) of chiselled steel, and several Genoa blades attached to the hilts of Indian workmanship. Thurston, *Madras Presidency*, p. 229.

king had, according to Paes,[19] a million fighting men about him, we shall have some idea of the demand under this head.

(d) In households.

Of things for household use, we find different kinds of vessels, lamps, bedsteads etc. The demand for these is closely connected with the standard of life of the people. Iron lamps are said to have been in use among the richer classes;[20] much copper was also used and taken inland for coinage and for cooking pots and other vessels used by the country people.[20a] But beyond these we have little information for the period under consideration. Regarding localities of manufacture, they too had a tendency to get established near places of worship where pilgrims met, or near courts and centres of business.

2. Textiles.

The demand for textiles was internal as well as external. The former is dealt with under 'standard of life', and the latter under 'foreign trade'.[21] Here it is sufficient to point out that the internal demand was affected by the fact noted by a contemporary traveller,[21a] that in a hot climate, the common people were satisfied with the minimum cloth-

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[19]Paes, Sewell, *A Forgotten Empire*, p. 279. As to the number see Sewell's comment on p. 147 ff.

[20]Vasco Da Gama, *The First Voyage*, pp. 59—60.

[20a]Barbosa, *An Account*, I, p. 191.

[21]infra, chs. VIII and V.

[21a]Conti, Major, *India*, p. 22—"They cannot wear more clothing on account of the great heat".

ing; the external demand came from all countries on the Indian ocean.[22]

Of kinds of textiles, we have mention of turbans, calicoes, muslins called Candaharians, buckrams, and 'women's cloth'; of places of manufacture we have specific mention of Chaul, Mutfili (Telingana), Malabar and Mysore. Varthema[23] tells us that cotton stuffs were manufactured in great abundance at Chaul. Details are given by Barbosa.[24] Turbans, Roman turbans and fine calicoes were made out of muslin. Further we are told that they made cloaks of it, joining two pieces together and they dyed them with good dyes. In and around Goa, there was much cotton and very fine cloth made of the last, for all the cloth that was manufactured was made out of it;[25] women's cloths are mentioned as having been manufactured in Mysore;[25a] at Tāna, 5000 velvet weavers were working in the middle of the 14th century.[26]

Flowered patterns were available at other places. Mahuan says that at a distance of 167 miles from Calicut is the kingdom or city of Kanpamei, a great city of cotton manufacture, where is made, as also in the surrounding districts, a cloth called chih-li (chih-li-pu)

[22]infra, ch. V, sect. (2).

[23]*Travels*, p. 114.

[24]*An Account*, I, p. 160.

[25]Nuniz, Sewell, *A Forgotten Empire*, p. 386.

[25a]*Ep. Car.*, III, Maḷavaḷḷi 65—1200 A.D.

[26]According to Botero [cited by Yule in Marco Polo, *Travels*, II, p. 396 n. 1]. See also Nairne, *The Konkan*, *Bombay Gazetteer*, I, part ii, p. 37.

cloth. It is sold there for 8 or 10 gold pieces of their money.[27] They also prepare raw silk for the loom, which they dye various shades of colour and then weave into flowered pattern goods, made up into pieces four to five feet wide and twelve to thirteen feet long. Each length is sold for one hundred gold pieces of their money.[28] A reference to the same or a similar variety appears in Ibn Batuta[28a], which he calls *salāhiyah.*

At Pulicat there was made great abundance of printed cotton clothes, 'worth much money in Malacca, Peeguu, Çamatra and in the kingdom of Guzerate and Malabar for clothing';[29] silk cloth, coloured velvet, velvety satins and taffeties and thick carpets are also referred to on the West coast.[29a]

Cloth of flax seems to have been produced in the country of Bodial[30]; a kind of cloth from cocoanut fibre was also manufactured, if we are to believe Marignolli: "among the fronds of the Nargil, there grows a sort of fibrous web forming an open network of coarse dry

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[27] *Tao i chih lio*, Rockhill, *Notes*, [*T'oung Pao*, XVI, p. 467 and n.] mentions a very fine cotton stuff each piece *seven* feet wide; the *Ko-ku lun-yao* (XIVth century) also mentions a variety of shawl 'very white and seven feet wide', ibid.

[28] Mahuan, *Account*, *J.R.A.S.*, 1896, p. 345.—in K'an-pa-mei; this may refer to Coimbatore in the Madras Presidency—see ibid., note 1 by Phillips.

[28a] Ibn Batuta (Defrēmery), IV, p. 3. Yule, *Cathay*, IV, pp. 77 ff. probably *shali*, the name given to a soft twilled cotton, generally of a dark red colour.

[29] Barbosa, *An Account*, II, p. 132—Paleacate.

[29a] Barbosa, *An Account*, I, pp. 141 and 143—44.

[30] Perhaps Budēhal, in Mysore, in the Chitaldrug division. Nuniz, Sewell, *A Forgotten Empire*, p. 388, and Sewell, ibid., n. 1.

filaments. ......it is customary to make of those fibres wet weather mantles for those rustics whom they call *Camalls*".[31]

As to the quality of the textiles in general, we have Marco Polo's evidence. He calls them, 'the best and most delicate buckrams' and those of highest price looked like the "tissue of spider's web. There is no king nor queen in the world but might be glad to wear them."[32] Elsewhere[32a] he speaks of very delicate and beautiful buckrams. In a hot climate, there was demand for such delicate textures from the upper classes: "The Moslims and infidels in this tract wear the same dresses. They use fine muslin garments on account of the extreme heat."[33]

Tailoring. A subsidiary industry under 'textiles' may be touched upon here, viz., tailoring. It has been denied that tailors existed in South India, and the denial is partly based on the authority of contemporary travellers like John of Montecorvino:[34]

"On account of the great mildness and warmth of the climate the people go there naked only covering the loins. And thus the arts and crafts of our tailors and cordwainers are not needed for they have perpetual

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31 Marignolli, Yule, *Cathay*, III, p. 241.

32 Marco Polo, *Travels*, II, p. 361.

32a Ibid., p. 389. For the existence of varieties of such patterns until recent times see Thurston, *Madras Presidency*, p. 225.

33 Ibn Haukal, Elliot, *History*, I, p. 39.

34 John of Monte Corvino, Yule, *Cathay*, III, p. 57.

summer and no winter". Other statements are those of Marco Polo,[35] Odoric,[36] Marignolli,[37] Nikitin,[38] and Wang Ta-yüan.[39]

The tax on tailors found in inscriptions of the twelfth century shows that tailoring as an occupation was not unknown at the time. The following pieces of evidence are further proof to the same fact:—the mention of *tayyān*[40] and *pāṇan,* of the 'company of tailors of the families of the five cities',[41] and of 'all the headmen of the tailors (*samasta-sippiga-gottaḷi*)' granting one *paṇa* a year from each family.[42]

3. Wood Work: furniture.

The demand for handicrafts connected with wood may be said to be three-fold: furniture, wheeled carriages and ship-building. Regarding the first we have little information. The very vague description of Randēr by Barbosa, that the Moors have their houses well kept and *furnished* and that they use in the front rooms of their houses to have many shelves all round, the whole room being surrounded by them as in a shop, may be taken to mean that the Moors in general made more use of furniture than others, but it is insufficient to allow any general inference regarding the use of wooden furni-

[35] *Travels*, II, p. 376.

[36] Odoric, Yule, *Cathay*, II, p. 137.

[37] Marignolli, Yule, *Cathay*, III, p. 256.

[38] Nikitin, Major, *India*, p. 9.

[39] *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 464.

[40] 1011 A.D.—*South Ind. Inscr.*, II, 66, paras, 499 and 506.

[41] *Ep. Car.*, V, Bēlūr 236 (Supplement)—1139 A.D.

[42] *Ep. Car.*, VII, Shikārpur 112, 1139 A.D.

ture. On the other hand the mention of carpets[43] indicates that carpets to a certain extent filled the place of furniture.

Wheeled carriages.

The use of wheeled carriages has been denied to have existed, below the Vindhyas,[44] probably on the evidence of foreign travellers alone e.g. Ibn Batuta. Indigenous evidence, epigraphic and literary, would seem to suggest that the use of such wheeled carriages was not uncommon. An inscription[45] from Dorasamudra tells us that in 1136 A.D. on all things brought into the town for sale on asses a duty of one *bele* i.e. one-eighth of a *paṇa* was imposed while things brought on bullocks were taxed at one-fourth of a *paṇa* and on carts at $\frac{3}{8}$ of a *paṇa*.[46] This shows that in the locality mentioned, asses, bullocks and carts were actually used for transport in the twelfth century. Literature[47] supports this, and we may assume that in rural parts, and to a large extent in the town, carts were used for transport.

Shipbuilding.

Shipbuilding is dealt with more fully elsewhere;[48] here we may give some details of construction as evidenced by John of Montecorvino:—

[43] Barbosa, *An Account*, I, p. 147. Vasco Da Gama, *The First Voyage*, pp. 59—60; italics are mine.

[44] Moreland, *India*, pp. 7 and 166, Padmanabha Pillai, *Economic Conditions*, p. 17.

[45] *Ep. Car.*, V, Bēlūr 177 *bhaṇḍige*, and p. 181.

[46] See also *Ep. Car.*, IV, Huṇsūr 137—1162 A.D., *Inscriptions of the Pudukkōṭṭai State*, 365—carts carrying salt, dholl, betels, etc., in the 11th year of Jaṭāvarman *alias* Tribhuvanacakravartin Śrī Vīra-Pāṇḍyadēva.

[47] *Puṟanāṉūṟu*, 60, lines 6—9; Vijñānēśvara, *The Mitākṣarā*, ii, 299.

[48] infra, ch. v, sect. (5).

"Their ships in these parts are mighty frail and uncouth, with no iron in them, and no caulking. They are sewn like clothes with twine. And so if the twine breaks anywhere there is a breach indeed! once every year therefore there is a mending of this, more or less, if they propose to go to sea. And they have a frail and flimsy rudder like the top of a table, of a cubit in width, in the middle of the stern; and when they have to tack, it is done with a vast deal of trouble; and if it is blowing in any way hard, they cannot tack at all. They have but one sail, and one mast, and the sails are either of matting or of some miserable cloth. The ropes are of husk."[49]

We may also note that the centres of shipbuilding were Bassein, Calicut, Cochin and the Maldive Islands.[50]

Several kinds of ships are also mentioned[51] such as zambuquo, atalaya, terada, almadia, fusta, caturi, sanguical, campane, jase, puni, parao, capel, etc.

The demand for leather goods is dependent in part on the use of leather shoes by people of the time.

4. Leather goods.

Evidence here is varied according to locality. In Chaul[52] everybody is said to have walked 'with nothing on their feet'; elsewhere people are said to have worn shoes, e.g.

[49]John of Montecorvino, Yule, *Cathay*, III, pp. 66—67.

[50]Nairne, *The Konkan, Bombay Gazetteer*, I, part ii, p. 36. Varthema, *Travels*, pp. 152—54. Barbosa, *An Account*, II, pp. 93, 107.

[51]For details, infra, ch. V, sect. (5).

[52]Varthema, *Travels*, p. 114.

Varthema says that in the Dekhan people had shoes on,[53] and Nicolo Conti[54] supports this: at Quilon they wore red leather shoes;[55] Paes, while admitting that the majority of the people went about the country bare-footed, says:[56] the shoes worn by the few had pointed ends in the ancient manner, and there are other shoes that have nothing but soles but on top are some straps which help to keep them on the feet. They are made like those which of old the Romans were wont to wear as you will find on figures in some papers or antiquities which come from Italy. More evidence, however, is required before we can draw general conclusions.

5. Pottery.

Pottery was a widespread industry; potters were generally attached to the villages;[57] but beyond this, we have little information regarding the demand for or the quality of the goods under this head.

ii. Mines, minerals and fisheries.

Regarding mining, minerals and fisheries, the factors to be considered are three-fold:—the demand for minerals in the country, production from within, and the import from without.

Statistics in regard to demand are obviously impossible to get; the demand for gold and precious

[53]Varthema, *Travels*, p. 118.

[54]Conti, Major, *India*, pp. 22—23.

[55]Chau Ju-Kua, *Chu-fan-chï*, p. 91, n.17. Barbosa, *An Account*, I, p. 205.

[56]Paes, Sewell, *A Forgotten Empire*, p. 252—clearly the sandal of our day: the *Ceruppu*.

[57]supra, p. 266.

stones in general was not only for coinage but all those luxury industries which the general desire for jewellery and the existence of courts created; iron, copper and silver were in varying demand.

Import from without.

Before we take up production within the country we may briefly consider the evidence of import from without. We have evidence to the effect that at least part of the demand for precious stones was met by imports from Ceylon. The neighbouring island was from early days famous for such production. Abū Zaid in 916 A.D., Stefano in 1499 A.D. and Barbosa in 1516 A.D. confirm the existence in Ceylon of 'precious stones, red, green and yellow' as well as pearl fisheries. Stefano, e.g. says there were many precious stones such as garnets, jacinths, cat's eyes and other gems in Ceylon, though not of very good quality, but the fine ones grow in the mountain.[58] Pegu supplied rubies, topazes and turquoises, and Babylonia supplied emeralds.[59] Part of the demand, however, was supplied by the country itself: Barbosa speaks of many precious stones, hyacinths, amethysts and certain sapphires found in streams and rivers in Malabar.[60] According to Sewell,

Internal production.

the riches of the country were largely derived from the mines in the country.

[58] Stefano, Major, *India*, p. 5, Rashīdu-d Dīn reports that rubies and other precious stones were found in Ceylon (Sarandīp)—Rashīdu-d Dīn, Elliot, *History*, I, p. 70. In the thirteenth and fourteenth centuries, the Chinese chroniclers report the despatch of embassies to Ceylon to collect gems and drugs (Tennent, *Ceylon*, I. pp. 621—22). Ibn Batuta supplies valuable information for the early part of the 14th century, [Yule, *Cathay*, IV, p. 33.]

[59] Barbosa, *An Account*, II, pp. 217—26.

[60] Barbosa, *An Account*, I, p. 200.

Diamond.

We may first take up diamond. Nuniz[61] says that the diamond mines were farmed out on condition that all stones above twenty mangellins in weight—about twenty-five carats—were sent to the Raya of Vijayanagar for his personal use. The principal mines were in the north bank of the Krishna river and in the Kurnool and Anantapur districts notably at Vajra Karur, generally known to mediaeval writers as the 'mines of Golconda', apparently because merchants resorted to Golconda where the diamond was stored. They are mentioned by many writers including Marco Polo, Amīr Khusrū, Conti, Barbosa and Nuniz.[62] It is interesting to note that Uertomannus who is described as a Roman gentleman travelling in Southern India in 1503 A.D. refers to these mines as 'compassed with a wall and kept with a garrison'.[63]

The traditional story of how the diamond was procured is given by many writers.[64] Marco Polo was

[61] Nuniz, Sewell, *A Forgotten Empire*, pp. 388—89. According to Sewell (ibid., Appendix A), these mines were then the richest in the world.

[62] Marco Polo, *Travels*, II, p. 360, Amīr Khusrū, Elliot *History*, III, pp. 79—80, Conti, Major, *India*, pp. 29—30, Barbosa, *An Account*, p. 1, Nuniz, Sewell, *A Forgotten Empire*, pp. 388-89.

Amīr Khusrū makes an attempt to specify the exact locality as in a Doab or Interammia, one river being the Yashar, the other the Barnji, and Nuniz speaks of it as the country of Gate, the country of the Ghats or Gooty. The mines are about 20 miles south-west of Gooty in the Anantapur district. Thurston records that diamonds are said to be picked up in the fields after heavy rain by villagers who sell them to brokers. Thurston, *Madras Presidency*, p. 71.

[63] *The History of Travel*, etc., quoted by Ball, *A Geologist's Contribution*, *Ind. Ant.*, XIII, p. 242.

[64] See Marco Polo, *Travels*, II, p. 360, and n. Conti, Major, *India*, pp. 29—30. Bretschneider, *Mediaeval Researches*, I, pp. 151—52.

of opinion that no other country but Mōṭupalli produced them, but there they were found both abundantly and of large size: "Those that were brought to our parts of the world were only the refuse, as it were, of the finer and larger stones. For the flower of the diamonds and other large gems, as well as the largest pearls, were all carried to the Great Kaan and other kings and princes of those regions".

But the 'three different' ways in which he says these stones were procured by the people must be taken as, at least in part, legendary: "There are certain lofty mountains in those parts; and when the winter rains fall, which are very heavy, the waters come roaring down the mountains in great torrents. When the rains are over, and the waters from the mountains have ceased to flow, they search the beds of the torrents and find plenty of diamonds. In summer also there are plenty to be found in the mountains, but the heat of the sun is so great that it is scarcely possible to go thither, nor is there then a drop of water to be found. Moreover in those mountains great serpents are rife to a marvellous degree, besides other vermin, and this owing to the great heat. The serpents are also the most venomous in existence, insomuch that any one going to that region runs fearful peril; for many have been destroyed by these evil reptiles.

"Now among these mountains there are certain great and deep valleys, to the bottom of which there is no access. Wherefore the men who go in search of the diamonds take with them pieces of flesh, as lean as they

can get, and these they cast into the bottom of a valley. Now there are numbers of white eagles that haunt those mountains and feed upon the serpents. When the eagles see the meat thrown down they pounce upon it and carry it up to some rocky hill-top where they begin to rend it. But there are men on the watch, and as soon as they see that the eagles have settled they raise a loud shouting to drive them away. And when the eagles are thus frightened away the men recover the pieces of meat, and find them full of diamonds which have stuck to the meat down in the bottom. For the abundance of diamonds down there in the depths of the valleys is astonishing, but nobodoy can get down; and if one could, it would be only to be incontinently devoured by the serpents which are so rife there."

There was also another way of getting the diamonds: "The people go to the nests of those white eagles, of which there are many, and in their droppings they find plenty of diamonds which the birds have swallowed in devouring the meat that was cast into the valleys. And, when the eagles themselves are taken, diamonds are found in their stomachs."[65]

Nikitin distinguishes varieties of diamonds: one was sold at 5 roubles per 'parcel', another at 10; again he distinguishes one kind of diamond sold for 2000 pounds weight of gold per *lokot* from another,—the *kona* diamond, which was sold at 10,000 pounds of gold per *lokot*.[66]

[65] Marco Polo, *Travels*, II, p. 360.

[66] Nikitin, Major, *India*, p. 21.

False diamonds.

Perhaps being unable to meet the demand, false diamonds were also fabricated: 'In India also are fabricated false diamonds, rubies, topazes and white sapphires which are good imitations of the true stones...... These stones show no difference from the true save that they lose their natural colour, and there are some of which one half has the colour of a ruby and the other half of a sapphire or topaz; some really have these colours mixed, they bore them in the middle and thread them on two or three very fine threads, and then call them cats' eyes. Of those which come out white they make many small diamonds which differ not at all from the true, save by the touch of those practised therein'.[67]

It is apparently to these that the Roman traveller—Uertomannus—refers in 1503 when he says: "There are made likewise in India false diamonds of rubies, topazes and white sapphires, which appear to be fine........ These stones differ in none other save that they have lost their natural colour".[68]

Barbosa also says[68a] that another kind of sapphire was found on the sea-strands in the kingdom of Calicut at a place called Capucar; the sapphire was known as *Carahatonilam.* It was 'pale and fragile', very dark and blue in colour and only shone in the air.

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[67] Barbosa, *An Account*, II, p. 221.

[68] Ball, *A Geologist's Contribution*, *Ind. Ant.*, XIII, p. 242.

[68a] Barbosa, *An Account*, II, p. 223.

Pearl fisheries.

The pearl fisheries of the period mainly centred in the Gulf of Manar, though from Al Idrīsī[69] we get mention of a pearl fishery near Sūbāra: "Sūbāra is situated one and a half mile from the sea. It is........ considered one of the entrepôts of India. They fish for pearls here". The main fishery, however, was in Manar. It is referred to in Cōḷa inscriptions: "He [Kulōttunga-Cōḷadēva] was pleased to seize the pearl fisheries of the Madura country"[70] and by mediaeval travellers, Marco Polo, Ibn Batuta, Wang Ta-yüan, Barbosa and Varthema.[71] The season for diving was from the beginning of April till the middle of May. The gulf had a depth of only about 10 to 12 fathoms and in some places only two fathoms. According to Marco Polo, the divers first went to a place called Bettelar and then went 60 miles into the gulf. Here they cast anchor and shifted from their large vessels into small boats. What followed is best described in the words of the Chinese traveller, as recorded in the *Tao i chih lio*:—[72]

"When about to begin gathering them, the chief kills a human being and some tens of animals in sacrifice to the gods of the sea. Then they make choice of the day, the boats and the men to gather the pearls.

"Each boat has a crew of five men; two to row, two to manage the ropes. The fifth man hangs around his

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[69] Al Idrīsī, Elliot, *History*, I, p. 85.

[70] *South Ind. Inscr.*, II, 58, line 50.

[71] Marco Polo, *Travels*, II, pp. 331—32, 338, Ibn Batuta (Lee), p. 185, *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 386—87, Barbosa, *An Account*, II, pp. 116, 123, Varthema, *Travels*, p. 185.

[72] *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 386—87.

neck a bag, the mouth of which is held open by means of a bamboo ring, and, providing himself with a safety-rope, he ties a stone to his waist and lets himself sink down to the bottom of the sea. Then with his hand he pulls up the pearl-oysters and puts them in his bag. In response to his pulling the rope, the men in the boat, who are looking after it, pull him and the bag of pearl-oysters on his neck, into the boat. And so they do until the boats are full, when they go back to the government station, where, under the guard of soldiers, (the oysters) remain for a number of days until the meat rots. Then they remove the shells and wash away the rotten meat by stirring them around in a sieve, by which means the fish is got rid of and the pearls are left".

This plain statement of pearl fishing in Manar omits reference to the employment of shark-charmers or 'binders of sharks' whose presence was rendered necessary by the superstition of the divers: in the picturesque language of Marco Polo "they must also pay those men who charm the great fishes, to prevent them from injuring the divers whilst engaged in seeking pearls under water, one twentieth part of all that they take. These fish-charmers are termed *Abraiaman;* and their charm holds good for that day only, for at night they dissolve the charm so that the fishes can work mischief at their will. These Abraiaman know also how to charm beasts and birds and every living thing"![78]

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[78]Marco Polo, *Travels*, II, pp. 331—32.

Marco Polo also tells us[73a] that from there pearls were carried to all parts of the world. As soon as the middle of May was past, no more of those pearl-shells were found there.

Kinds of pearl.

Different kinds of pearls are mentioned in inscriptions:[74] round pearls,[75] roundish pearls,[76] polished pearls,[77] small pearls,[78] *śappatti, śakkattu,* crude pearls,[79] *nimbolam, payittam,* (pearls) resembling toddy in colour[80] (pearls) with rubbed surface and with cracked surface,[81] pearls of red water[82] and old pearls.[83] Other precious stones mentioned in the inscriptions are:—*paḍugan, kaḷḷippū, kokkuvāy* and *śavakkam.*[84]

Gold.

Regarding gold mining the remains of old mines are some reliable evidence. 'It is, however, a fact', says Gribble, 'that the whole of the Deccan from Mysore up to the northern limits of the Nizam's Dominions are covered with remains of old mining works.' In Mysore, it has been found that these old mines extend to a considerable depth and traces of what in mining language is called 'the old men' are found at three or four hundred feet beneath the surface. In many of these mines, the work

[73a] It is true, however, that they could be obtained in September and the first half of October but that was a long way from the main fishery, some 300 miles distant—ibid.

[74] *South Ind. Inscr.*, II, 34, Sect. 9 and 10.

[75] *vaṭṭam.* [76] *anuvaṭṭam.* [77] *oppumuttu.* [78] *kuṟumuttu.* [79] *karaḍu.* [80] *pāṇiccāy.* [81] *tōl-teyndana* and *tōlidanḍana.* [82] *civantanīr.* [83] *paḻamuttu.*

[84] *South Ind. Inscr.*, II, 2, p. 19, para 32.

had no doubt to be relinquished, because with the mechanical appliances of those days there was always a point beyond which the miners could not go owing to the want of proper pumps, and the cost of raising ore by manual labour.

In the time of Jordanus gold could be obtained in 'India the Less':[85] and Mysore inscriptions[86] of the thirteenth century mention an officer called *ākara-maṇḍalika*, the superintendent of mines.

It is an interesting fact that that the old native miners would appear to have been conversant with the use of quicksilver in gold mining. Sewell, to whom we owe the discovery of this fact, records that the miners selected the most likely looking pieces of the broken quartz, and then having washed these, reduced them to a fine powder by means of a heavy stone roller which was worked by two men on the surface of a flat scooped-out bit of granite. This powder was then again washed and afterwards burnt, so as to release the sulphur, a small globule of quicksilver being finally introduced to take up the gold. The amalgamated mercury and gold were then placed on a heated iron plate, the former escaping in the shape of vapour, while the latter remained in its pure state.[87]

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[85] Jordanus, *Wonders*, p. 23. India the Less, according to Yule [Ibid., p. 11 n. 1], embraced Sind, and probably Mekran, and India along the coast as far as some point immediately north of Malabar.

[86] *Ep. Car.*, V, Bēlūr 166, 1279 A.D.

[87] See *The Antiquarian Remains*, I, pp. 224—25 for details.

Iron mining was carried on in Mysore. The ore was obtained by washing the black sand brought down by the torrents or by digging into the ground as near Chiknāyakanhaḷḷi.[88] Nuniz[89] also refers to the fact that there was 'much iron' in the Kōlār district of Mysore, and Jordanus[90] says that in India the Less, which included the coastal districts of India on the west, iron could be obtained.

Iron.

As to other minerals the only evidence we have relates to sulphur, copper and salt. Al Kazwīnī speaks of a mine of yellow sulphur and a mine of copper at Kulam i.e., Quilon, the condensed smoke of which made excellent 'vitrol'. Salt-making was apparently a widely distributed occupation. We have mention of tax on salt pans from Chingleput, South Arcot, Guntur,[91] Tanjore, Travancore, Malabar, and Mysore.[92] Barbosa tells us that salt-making was an occupation of the Betunes.[93] Elsewhere[94] we are told that there were prescribed rules as to the removal of saline earth.

Sulphur, copper, and salt.

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[88] Chandrasekhara Sastri, op. cit., p. 215.

[89] Nuniz, Sewell, *A Forgotten Empire*, p. 388.

[90] Jordanus, *Wonders*, p. 23.

[91] The mention of Guntur reminds us that in the Ceded districts and especially in Bellary mounds of earth called modas survive as memorials of the days when the upparas (salt-workers) manufactured earth-salt from saline soils, for consumption by the poorer classes—Thurston, *Madras Presidency*, p. 79.

[92] 95 of 1903, 43 of 1905, 221 of 1905, 367 of 1911, 515 of 1914, 225 of 1916, 522 of 1918, 404 of 1921, 761 of 1922, 239 of 1925; *Trav. Arch. Series*, I, p. 247. Barbosa, *An Account*, II, p. 65. *Ep. Car.*, XI, Moḷakālmuru 8.

[93] Barbosa, *An Account*, II, p. 65.

[94] *Ep. Car.*, XI, Moḷakālmuru 8.

iii. Agricultural industries.

Agricultural industries are those by which agricultural produce, i.e., the raw material yielded by the land whether grain, oil-seeds or sugar, fibres, drugs or dye-stuffs, is worked up for consumption.

Products of the cocoanut.

The main group of industries under this head were those connected with the working up for consumption of the products of the cocoanut tree such as coir, toddy, palm sugar, mat, brushes, umbrellas etc. First perhaps in importance was coir. Its importance was increased by the fact that in shipping much iron was not used. "They have no iron to make nails of", says Marco Polo, "and for this reason they use only wooden trenails in their shipbuilding, and then stitch the planks with twine".

This coir was extracted from the husks of the cocoanut. These were rotted by burying them in pits on the margins of rivers, streams or backwaters in which they were left to soak for six months, a year or even longer. When the husks were removed from the pits, the fibre was beaten out by women, particularly of the Tiya castes, with sticks 'until it becomes like horse-hair', dried in the sun and twisted into yarn. On account of its strength, lightness, elasticity, and durability—it was "not corroded by the sea-water"—it was largely used for the ships of the times. But Marco Polo doubted whether it could stand well in a storm.[95]

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[95]See Marco Polo, *Travels*, I, p. 108. Barbosa, *An Account*, II, p. 91.

Toddy came next in importance. It was prepared from the cocoanut tree as well as other palms. The picturesque description of the cocoanut, and the preparation of toddy etc. by mediaeval travellers like Jordanus should seem a little queer to those accustomed to see these in daily life; their acute observations, however, enable us to follow the details. Jordanus, e.g., says after describing the cocoanut tree and its fruit-bearing capacity, "If any one careth not to have fruit, when the fruit-bearing stem is one or two months old he maketh a cut in it, and bindeth a pot to this incision; and so the sap, which would have been converted into fruit, drops in; and it is white like milk, and sweet like must, and maketh drunk like wine, so that the natives do drink it for wine; and those who wish not to drink it so, boil it down to one-third of its bulk, and then it becometh thick, like honey; and 'tis sweet, and fit for making preserves, like honey and the honeycomb. One branch gives one potful in the day and one in the night, on the average throughout the year: thus five or six pots may be found hung upon the same tree at once."[96] Other trees, the palmyra and the *birala* also were used for a similar purpose.[97] It is an interesting point made out by Barbosa, and substantially true to-day, that in Malabar only the *Tuias*[98] were allowed to make wine: "They make the wine of this land, and sell it, and no others may do this."

[96] Jordanus, *Wonders*, pp. 15—16.

[97] Called by Jordanus Tari and Belluri respectively, ibid., see also Marignolli, Yule, *Cathay*, III, p. 236.

[98] i.e. Tiyar—Barbosa, *An Account*, II, p. 60. See also Nagam Aiya, *Travancore*, III, pp. 67—70, 307—08.

Among other industries connected with the tree was the jaggery or palm sugar which was made by boiling down the fresh toddy over a slow fire, and, according to Jordanus, generally to one-third of its bulk.

The leaves of the palms were used for making mats, umbrellas, bucklers, etc. The mats, according to Barbosa, were made by a special caste of people called *manen* while the latter two were made by another caste called *kaniams*. The mats were apparently of good quality. Abd-Allatīf[99] says in 1203 A.D., "I saw in the hands of an Indian trader very beautiful mats, finely woven and painted on both sides with most pleasing colours.......... The merchant told me........that these mats were woven of the leaves of the Indian plantain........ and that they sold in Mabar for two *dinars* apiece".

And from the shell close to the kernel, they made charcoal for the goldsmiths who worked with no other kind.[100] The shell could also be made into bowls.[101]

A crude kind of cloth was also made out of the fibrous web forming an open network of coarse dry filaments.[102]

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[99]Abd-Allatīf, *Relation de l' Egypte*, p. 31, quoted in Yule, and Burnell, *Hobson-Jobson*, s. v. Mabar.

[100]Barbosa, *An Account*, II, p. 91.

[101]*Ying yai shĕng lan*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 459.

[102]Marignolli, Yule, *Cathay*, III, p. 241 and supra, pp. 453—4.

Food products.

Industries handling food products in some form or other could be found in villages in general, such as converting grain into flour etc. Sugarcane mills are mentioned as having existed at Guntur,[103] Naññjangūḍ,[104] (Mysore), Maḷavaḷḷi,[105] and Kṛishṇarājpēṭ.[106]

Dyeing.

Dyeing must also be included under agricultural industries. Barbosa speaks of it at Chaul.[107] It also appears that dyeing was the monopoly of a particular caste; and that occasionally the dyers migrated in a body to places where there was demand for their services. An interesting inscription from Travancore dated 1486 A.D. states how the Brahmans, the Pillaimars and other superior sections of the community looked down upon the inhabitants of Parasurāma Perunteru who earned their bread by dyeing cloths and who had come from distant lands and colonized the said Perunteru.[108] They were also subjected to some hardships by them, particularly by being prevented from paying their respects to the king except through themselves, and from worshipping the village gods as the high class people did, and they were to readily pay any kind of tax levied on them; if any of the rules were infringed, they were subjected to corporal punishment and even

[103] 328 of 1915.

[104] *Ep. Car.*, III, Naññjangūḍ 89.

[105] *Ep. Car.*, III, Maḷavaḷḷi 95.

[106] *Ep. Car.*, IV, Kṛishṇarājpēṭ 21, 22—1402 A.D.

[107] Barbosa, *An Account*, I, p. 161.

[108] Nagam Aiya, *Travancore*, I, p. 279.

forbidden to live in their own village or to use the village wells. The poor people took advantage of the royal presence in their midst and had to pray for redress of their grievances. This indicates, however, that internal migration of the dyers' caste was not uncommon in the southernmost part of the country.

Oil.

Oil was also an important commodity. Besides the oil of the cocoanut, oil was obtained from other seeds also, e.g. gingelly, sesamum and castor. Oil production appears also to have been widespread.

Oil mills were of stone.[109] Three forms of oil mill are mentioned in inscriptions of the period. One is *kaigāṇa*[110] or hand mill; another *ettugāṇa,* mills in which bullocks were used; perhaps there were two varieties, one using only one bullock and another using two bullocks. The tax on *kaigāṇa* was only half of that on *ettugāṇa.* Another variety mentioned in the inscriptions is *meṭṭugāṇa.*[111]

Cane-work.

Lastly we have some references to beds made of light cane-work.[112] They were 'finely worked and painted'. Marco Polo observed that they "are so arranged that, when they

[109] *Ep. Car.*, III, Nañjangūḍ 150—1145 A.D.

[110] *Ep. Car.*, III, Nañjangūḍ 134—1021 A.D.

[111] *Kai-gāṇa*, *Ep. Car.*, XII, Tiptūr 66—1163 A.D. *Ep. Car.*, V, Hassan 54—1176 A.D.

ettugāṇa, *Ep. Car.*, V, Arsikere 172—1163 A.D.

meṭṭugāṇa [tread oil-mills?] *Ep. Car.*, V, Bēlūr 114—p. 178 [text]—1173 A.D.

[112] Marco Polo, *Travels*, II, p. 346.

have got in and are going to sleep, they are drawn up by cords nearly to the ceiling and fixed there for the night. This is done to get out of the way of tarantulas which give terrible bites, as well as of fleas and such vermin, and at the same time to get as much air as possible in the great heat which prevails in that region".

(3) THE SYSTEM OF PRODUCTION

Introductory—System in the villages—In the urban area—Handicraft—Wage-work—Its essential feature—Possible abuses—Regulations in the *Mitākṣarā*—Itinerant type—Artisans attached to courts and institutions—System of wage payment.

Introductory.

The evidence regarding the system of production may now be brought together. We may preface it with the remark that here we are not concerned with the organization of the men who took to particular industries—this has been studied in the section on caste gilds. First we shall take up the system in the villages. It has been noted that the village had attached to it a certain number of servants; in modern phraseology such a system would be termed 'demiurgic': the handworkers were small farmers who were not able to live from the product of their allotments alone; they were attached to the village subject to the disposal of any one who had need of industrial service. They were essentially village serfs, receiving a share in the produce of land or money payments. The motive for this need not be discussed here; it is at least possible that it arose partly out of the fact that a money

System in the villages.

circulating medium did not obtain to any large extent. The distinguishing feature of the system was absence of localization in contrast with the town where whole villages or streets consisted of artisans of the same trade. One other point may be noted, viz., even these persons in rural districts united the functions of the husbandmen or labourer to the craft which they practised;[113] this particular feature appears not to have been confined to South India—for in mediaeval Europe also, we are told the workman combined the cultivation of a small plot of land with industrial pursuits.

A specific provision was sometimes made against servants taking up work in other villages. We may cite an instance regarding carpenters in the village of Tribhuvani in 1113 A.D.: They "should take up such services in the village only. Those who engage themselves in these services beyond this village will be considered to have transgressed the law, to have committed a fault against the great assembly and to have ruined the village".[114]

Another interesting sign of the times was that a Śaiva goldsmith was recruited for a village in which perhaps the larger part of the villagers was of the Śaivaite fold.[115]

The chief industries of this type were those of the potter, the blacksmith, the carpenter, the goldsmith,

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[113] e.g. 438 of 1913.

[114] 205 of 1919—1113 A.D.

[115] 1404 A.D.—*Ep. Car.*, VIII, Tīrthahaḷḷi, 129.

etc.; whether there were also common weavers maintained out of the village funds is a doubtful point. An inscription of Rājarāja dated 993 A.D. refers to the *Anniyāyavāvadaṇḍaviṛai* which has been interpreted to mean a tax on unauthorized looms in the village.[116]

In the Urban area.

In the urban area, we may say that broadly speaking there were three chief systems prevailing side by side:—

i. Where the artisan owned the place of work, tools of production and the raw materials and supplied labour.

ii. Where the artisan owned the place of work and tools of production and supplied labour, but applied his labour on the raw material brought to him.

iii. Where the artisan had only tools of production and supplied labour, but worked in the house of the consumer on the raw materials supplied by him.

We have evidence for each of the above.

Handicraft.

The first is properly handicraft or price work. The artisan possessed the means of production and sold for a definite price the finished article which was the product of his own raw material and his own incorporated labour. It was properly custom production: the artisan worked for the consumer of his product

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[116] *Ep. Ind.*, IV, pp. 137—38.

In the Kūram plates of Paramēśvaravarman I looms are included among the property owned by the village in common (*South Ind. Inscr.*, I, p. 155). Dr. Matthai (*Village Government*, p. 17 n.) is also of opinion that each village owned a certain number of looms in common, and the weavers who worked them were maintained out of the village funds.

whether it be that the latter by placing separate orders afforded the occasion for the work or that the two met at weekly fairs. Ordered work and work for the market supplemented each other, thus avoiding dull times. The customer bought at first hand, the handicraftsman sold to the actual consumer; the noticeable feature was that the producer in the presence of the consumer felt responsibility for his task. Besides, there were also regulations to protect the consumer which must have been well understood, though we are not sure how far they were actually practised, e.g. the rule that sale must be in public[117]—a provision which finds a close analogy in the German law[118] of the period: sales must be public and at first hand.

That much of the production was carried on in this fashion one cannot doubt: this has been the system persisting through centuries. References to the shopkeeper who opens the shop in his own house, (*manaikkaḍaiyār*) under the heading workshop (*paṟṟaḍai*) taxes[119] also point to the same fact. But more interesting is it to note that in the system of handicraft, there were grades of workers, distinguished perhaps by the degree of skill to which they had attained: the chief potter, the chief blacksmith, carpenter etc. are distinguished by the term *ācārya*.[120] Again in an inscription from Tanjore[121] the master craftsman is assigned 1½ shares, two other men 1½ shares, etc.

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[117] Vijñāneśvara, *The Mitākṣarā*, ii, 168.
[118] Bücher, *Industrial Evolution*, p. 121.
[119] 59 of 1914, *A.R.E.*, 1915, part ii, para 44.
[120] 59 of 1914, *A.R.E.*, 1915, part ii, para 44.
[121] *South Ind. Inscr.*, II, 66, para 503.

The second system was what might be termed, wage work. It means wage labour embodied in the material of another. The distinctive feature here was that the artisan did not supply the raw material: this was supplied by the consumer. This might again be of two kinds:—(a) where the artisan stayed in his own house, the raw materials being brought to him; (b) itinerant work where the labourer went from place to place in search of work carrying with him his tools. In either case the distinguishing feature was that the workman merely received the wages for his labour. It is interesting to note that some kinds of industry like weaving and oil-production could be carried on only by the first method, as the instruments of production were not easily portable.

Wage-work.

From the economic point of view, the essential feature of the wage-work system was that there was no business capital. The finished industrial product was not, for its producer, a means of profit. Its advantage was that it was an attempt at a complete adjustment of supply to demand.

Its essential feature.

The system, however, had to be protected from the possible abuses to which it might lead. One particular abuse, viz. misappropriation of part of the raw material given to the handicraftsman was well protected against. From rules given in the *Mitākṣarā*, it seems clear that gold, silver, tin, lead, copper, iron, hemp, silk, hair, woollen yarn and cotton yarn were given to the artisans under the wage

Possible abuses.

work system; and rules are given to ensure that the same quantity of raw material given to the hands of the artisan should be returned in the finished article allowing for legitimate reduction in the case of heating metals.

Regulations in the *Mitākṣarā*.

Articles for this purpose were understood to be of several kinds (a) those which were not likely to undergo any reduction in the process of manufacture e.g. while being heated in fire, gold is not reduced. "Therefore, as much may have been delivered into the hands of goldsmiths for preparing a bracelet etc., so much by weight must be returned by these; otherwise they should be compelled to make good the loss and punished too."[122]

(b) Others where some loss might be expected, silver, tin, lead, copper and iron are examples. According to the law books 2 per cent, 5 per cent, 8 per cent, 10 per cent, etc. might be allowed.

(c) In another type of articles the loss could not be calculated.

Other difficulties in such cases might occur where the material entrusted with the artisan was lost for no fault of the artisan. Mādhavācārya[123] says, that if raw material like gold entrusted with a goldsmith for being made into ornaments was even after demand several times not tendered by the artisan, and then it was destroyed 'by act of God or King', the artisan himself had to make

[122] Vijñāneśvara, *The Mitākṣarā*, ii, 178.

[123] Mādhavācārya, *Parāśara-Mādhava*, III, p. 210.

good the loss, but if say raw material like yarn was given to the weaver for the purpose of making cloth, and if loss occurred after the weaver had tendered the cloth, but was not accepted by the owner, in such a case, the weaver was not responsible for the loss. The *Śilpi Nyāsa Svarūpam* was a distinct and complex branch of law.

Itinerant type.

The wage work of the migratory type appears also to have been prevalent. This corresponded to hawking in the field of trade—here the hawking was of labour alone—we have little evidence to say more of this: but it is interesting to note that such migration sometimes took place on a large scale, ultimately leading to a permanent settlement in the new regions: the silk weavers (*pattunūlkārar*) belonging to the Saurāṣṭra community of Madura are said to have come from Vijayanagar;[124] another instance is recorded in a Travancore inscription.[125]

Two factors are to be noted here—one was the encouragement given by rulers of the land to such migrations, another the apathy of the people of the new places to the incoming of the strangers. The former may be chiefly seen from the large number of remissions of taxes.[126] From a few records in the Travancore

[124] Saunders, *The Saurāṣṭra Community*, *J.M.U.*, I, p. 71.
[125] Nagam Aiya, *Travancore*, I, p. 279.
[126] 471 of 1920.
201 of 1923.
429 of 1925—1443 A.D.
547 of 1925—1535 A.D.
587 of 1926—1302 A.D.

state we also learn that one or two of its rulers demarcated some lands to enable certain classes of weavers etc. to colonize them and granted them other concessions.[127]

In contrast with this is the attitude of the inhabitants of the locality to which the artisan went. It is recorded[128] that the Brahmans and other superior sections of the community in Paraśurāma Perunteru [in Kōṭṭār, Travancore] looked down upon the dyers who had come from distant lands and colonized the place. They were subjected to some hardships[128a] and the oppressed folk had to seek redress from the king.

We may not suppose that such was the rule everywhere but the existence of such records at least goes to prove that the possible dislike of the people of a locality was a factor to be taken into consideration.

Artisans attached to courts and institutions.

Closely akin to the wage-work system was the system of employment of artisans attached to courts and institutions. Nuniz tells us, e.g., that the king of Vijayanagar had continually about him two thousand artificers mainly blacksmiths, masons and carpenters.[129] The temple also maintained such artificers.

System of wage payment.

There does not seem to have been any uniformity as to the system of wage payment, where wage work was prevalent. Nuniz[130] says that in Vijayanagar the

[127] *Trav. Arch. Series*, IV, p. 98 and supra, p. 290.

[128] Nagam Aiya, *Travancore*, I, p. 279.

[128a] supra, pp. 311—12.

[129] Nuniz, Sewell, *A Forgotten Empire*, p. 381.

[130] Nuniz, Sewell, *A Forgotten Empire*, p. 381.

worker was paid every day even when he was attached to the palace. Barbosa[131] has it that it was the custom among the Moors and Indians that when the workmen came to begin any work they gave them a certain quantity of rice to eat and when they departed at night they gave them a *fanam* each.

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[131] *An Account*, II, p. 99.

CHAPTER V

Foreign Trade

(1) INTRODUCTORY: A SKETCH OF FOREIGN TRADE IN THE FIRST HALF OF THE TENTH CENTURY

Our evidence—Mainly foreign—The indigenous evidence—A sketch of foreign trade in the first half of the tenth century—Our authorities for this sketch—*The demand for goods*: i. exports from South India (a) to the West—(b) To the East—ii. Imports into South India—*Commercial Communities*—(a) on the West Coast—i. the Mahomedans—Growth of their power—Their position on the West Coast of South India—Mahomedan settlements: factors which helped them—Story of their first settlements—Their growth—Its importance—ii. The Venetians—Indigenous communities:—iii. the Malayālis—iv. The Banias—v. The Chinese—(b) On the East Coast—i. The Mahomedans—ii. Indigenous communities—*Ports*—West Coast—The Malabar ports—The East Coast: absence of evidence—The direction of South Indian trade: the West—The East—*Shipping*—*Navigation.*

If the material for an adequate survey of our industries in the middle ages is not as much as we should like to have, the evidence for tracing the vicissitudes of commerce during the same period may be considered comparatively plentiful. This evidence is mainly foreign. In discussing the sources we have referred to the fact that the indigenous source of inscriptions is almost our sole evidence for the proper understanding of the land tenures of the country. It is an interesting parallel to this that the contemporary

Our evidence.

Mainly foreign.

evidence for a sketch of foreign trade is almost wholly that of foreign travellers and chroniclers. And it is not surprising. They were mainly interested in the foreign trade of the country. Many of them travelled from port to port, observing and recording the ebb and flow of trade. Their observations will be seen to be more valuable when we remember that they had the additional advantage of observing the navigation of the coast and of the open sea, the mode of construction of the ships in which they sailed, and the destination of the goods which were shipped from the ports of the east and west coasts. And let it be said to their credit that they were keen observers and recorded their observations with that minuteness of detail which gives flesh to the dry bones of a narrative. (Among Indian writers, Rashīdu-d Dīn and Wassāf are perhaps the only two who have left some notices of South Indian trade, but they must be classed as foreign to South India.) Their interest in the horse trade and other aspects of the commerce of South India is explained by the circumstance that South India came, for a time, under the sway of the Delhi emperors in the early years of the fourteenth century, and the latter were apparently struck with the volume of commerce of the newly added provinces; the writings of the two chroniclers mentioned above give expression to this newly awakened interest of the North in the foreign trade of South India.

The indigenous evidence.

Two exceptions, however, must be made to the general statement that indigenous evidence is generally silent on this aspect of our subject. The writings of the

jurist, Vijñānēśvara, enable us to understand some of the prevalent ideas, if not the practice, of the time regarding the conduct of foreign trade. The charters granted to merchants trading at sea, of which two are extant,[1] form the other welcome exception, helping us to get a glimpse of the part that the state played in encouraging foreign commerce. Taken together, they help to supplement our knowledge of the foreign trade of South India, mainly derived from the writings of travellers and chroniclers from foreign lands.

A sketch of foreign trade in the first half of the tenth century.

At the beginning of our period, merchants from beyond the sea were already frequenting the ports of South India in considerable numbers, and were carrying on a prosperous trade with the countries both in the West and in the East. This trade has been traced to very early times.[2] For our present purpose, we may begin with a brief sketch of the general features of this commerce in the first half of the tenth century.

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[1]The Mōṭupalli inscriptions, 600 and 601 of 1909, *Ep. Ind.*, XII, pp. 188—97 and *A.R.E.*, 1910, part ii, paras 45 and 61. They record the charters granted by the Kākatīya king Gaṇapatidēva and the Reḍḍi chief Annapōta Reḍḍi in the years 1244 A.D., and 1358 A.D. respectively.

[2]For an account of this early trade, see:

Crawfurd, *Researches.*

Heeren, *Historical Researches.*

Kanakasabhai Pillai, *The Tamils.*

Mookerji, *Indian Shipping.*

Rawlinson, *Intercourse.*

Robertson, *An Historical Disquisition.*

Vincent, *Commerce.*

Warmington, *Commerce.*

Our authorities for this sketch.

The main features of this trade are best studied from the writings of the two travellers Sulaimān and Abū Zaid, who recorded their notes towards the latter half of the ninth and the beginning of the tenth centuries respectively.[3] The series of narratives which we know by the name of Sinbad the sailor are also valuable. The accounts of these seven famous voyages are obviously based on trustworthy records and in them 'we have a true history, in a romantic setting, of Moslem travels in the ninth and tenth centuries'.[4]

The accounts of Ibn Khurdādba, Al Mas'ūdī and Al Istakhrī,[5] about the first half of the tenth century, help to fill in details.

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[3]According to Renaudot, the original manuscript containing their narratives gives two dates, the one the year CCXXXVII of the *Hejira*, and the other CCLIV corresponding to the years of Christ DCCCLI and DCCCLXVII respectively (Renaudot, *Ancient Accounts*, p. vi). Al Mas'ūdī seems, however, to have met Abū Zaid, the second traveller, at Basra in 303 A. H. (916 A.D.) and acknowledges to have derived information from him. (Elliot, *History*, I, pp. 2—3). On the other hand, Abū Zaid was indebted to Mas'ūdī for some of his statements (Elliot, *History*, I, p. 2). That he was a contemporary of Mas'ūdī is also noticed by Wilson (Wilson, *The Persian Gulf*, p. 58). Mas'ūdī lived as late as the year 956 A.D. (Elliot, *History*, I, p. 19). We are led to infer, therefore, that Abū Zaid must have completed his additions to the work of Sulaimān about the beginning of the tenth century.

Birdwood agrees, in the main, with this view, (Birdwood, *Report*, p. 109).

[4]Wilson, *The Persian Gulf*, p. 60.

We may also quote the high authority of Beazley: It is 'a real account, with a little more of mystery and exaggeration than usual, of the experiences of the early Arab mariners in the Southern Ocean.' (Beazley, *Modern Geography*, I, p. 49). Oaten too speaks in similar terms, Oaten, *European Travellers*, p. 14.

[5]See List of Authorities.

Such accounts have, however, important limitations.[6] To take one example, we should not expect to find a clearly drawn up list of articles exported from or imported to South India. The travellers were rather interested in the trade of the coasts on 'the sea of India' and 'the sea of Harkand,' as Sulaimān would have it,[7] taken as a whole, and they mix up the products of all the countries bordering on the Indian ocean, so that it is difficult to say which of these relate to South India alone.[8] Mas'ūdī who was contemporary with Abū Zaid writes in the same strain. The task of sifting what is relevant to our purpose is not altogether easy and it is rendered perhaps more difficult by another consideration equally important. Merchants particularly from the West coast were engaged not only in the export of articles produced locally but a considerable proportion of their export trade centred in commodities which were imported by them from Ceylon, and the countries in the East which they re-exported.[9] Difficulties of a somewhat similar kind are also observable in their treatment of the communities who were engaged in the trades, the ports from which the trade started, and other aspects of commerce; an attempt is made here to sketch the state of foreign trade of the country in the first half of the tenth century, in the light of available evidence but we

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[6]supra, p. 43.

[7]Sulaimān, Renaudot, *Ancient Accounts*, p. 10. Abū Zaid, Renaudot, *Ancient Accounts*, p. 93.

[8]For an example, see Abū Zaid, Renaudot, *Ancient Accounts*, pp. 93—94.

[9]See Renaudot, *Ancient Accounts*, pp. 152—53.

may preface it with the remark that conclusions under this head are tentative.

The demand for goods:
1. exports from South India (a) to the West.

Among the articles exported from South Indian ports an important place was no doubt taken by spices. In Europe the food of the common people would seem to have been intolerably coarse and even the diet of the rich needed a great deal of condiment if it was to be palatable. The preservation of meat was done either by salting or by using spices, the latter being generally preferred. Spices are specifically mentioned by Abū Zaid[10] as being a product of the Indian coast and it appears further that the Mahomedans by their trade with the Chinese and Indian merchants had drugs and spices.[11] An interesting instance of the demand in England for the spices from South India as early as 883 A.D. is noticed by William of Malmesbury:[12] "In the year 883, Sighelmus, Bishop of Sherborne in Dorsetshire, being sent by King Alfred to Rome with presents to the Pope, proceeded from thence to the East Indies, to visit the tomb of St. Thomas at Meliapour, by whose means the English nation had an early view of the riches of those countries in the spices and jewels which the Bishop brought back with him".

Among the spices, a staple article in demand was pepper. Not much pepper was available on the east

[10] Abū Zaid, Renaudot, *Ancient Accounts*, p. 93.

[11] Renaudot, *Ancient Accounts*, p. 153.

[12] Cited by Milburn, *Oriental Commerce*, I, p. 1.

coast: in Kalinga they eat pepper green (in this country) because it is scarce.[13] Mas'ūdi[14] supports the statement: The country (Firanj) produces only little pepper. Malabar, then, would appear to have been the main place of export of this commodity. Sindbad in his fourth voyage appears to have been carried to the coast of Malabar, where he found men gathering pepper.[15] Ibn Khurdādba[16] also speaks of the same: in 'Mali (Malabar)....pepper is to be found', and mariners were careful to observe and study the growth of the pepper vine. The same author notes: "The mariners say every bunch of pepper has over it a leaf that shelters it from the rain. When the rain ceases, the leaf turns aside; if rain commences the leaf again covers the fruit."[17]

Cloves were used for seasoning food and drink and also as medicine. There is no definite mention in our authorities that it was then produced in South India. The vague statement of Abū Zaid[18] that it was a product of the shores of the sea of India or of China only helps to confirm the statement of Cosmas[19] (535 A.D.) that cloves along with silk and sandalwood came from Sielediba (Ceylon) to the marts of Malê (Malabar).

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[13] Sulaimān, Elliot, *History*, I, p. 6.

[14] Al Mas'ūdī, Elliot, *History*, I, p. 25.

[15] Major, *India*, p. xxxiii.

[16] Ibn Khurdādba, Elliot, *History*, I, p. 15.

[17] Ibn Khurdādba, *Routes*, *Journal Asiatique*, Sixième Série Tome V, p. 284.

[18] Abū Zaid, Renaudot, *Ancient Accounts*, p. 93.

[19] Cosmas, Yule, *Cathay*, I, p. 227.

Cinnamon and nutmeg served a similar purpose but they too may be treated as entering the entrepôt trade.[20]

Besides the spices which were employed by mediaeval apothecaries in Europe, many wares were in demand which served mainly for drugs. Hence the mention of drugs by all our authorities as having been items of export. We have already quoted Renaudot to show how the Mahomedan merchants had, by their trade with the Chinese and Indian merchants, 'silk, rich stuffs, and many other manufactures, drugs and spices.'[21] Istakhrī (951) definitely refers[22] to Indian drugs, perfumes and condiments.

Among them aloes find a prominent place, but it is likely that the term 'drugs' included many smaller articles like rhubarb, balsam, gum benzoin, cardamon etc., but in the absence of positive evidence to the effect we refrain from making a definite statement on the point.

Among other items, we also find mention of certain classes of wood. Teak comes first. The demand for this seems to have been confined to Siraf on the Persian Gulf. 'This tree at that time furnished the inhabitants of Siraf in Farsistan with the wood of which they built their houses.'[23] The place of export, if we may believe the same authority, was the Konkan, which is called by Idrīsī somewhat later as 'the country of the Teak'.

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[20] Abū Zaid, Renaudot, *Ancient Accounts*, p. 93.

[21] Renaudot, *Ancient Accounts*, pp. 152—53.

[22] Al Istakhrī, quoted in Wilson, *The Persian Gulf*, p. 94.

[23] Major, *India*, p. xxvi.

Bamboo was another of the imports into Siraf; it is known to have been a product of the West Coast.[24] Sandalwood, used chiefly for medicine, dyeing and oil, was also exported.

(b) To the East.

The contemporary evidence for tracing the demand for South Indian goods in the East is also wanting in clearness. There is a list of foreign imports into China in the *Sung-shï* or the annals of the Sung dynasty about the year 999 A.D.[25] Like some accounts of the early Arab writers, it mixes together facts which relate to various countries bordering on the Indian ocean, and the account in the *Sung-shï* is further defective in that it does not distinguish between imports and exports. From such evidence, no sound conclusions can be drawn here; it is worthy of remark, however, that black pepper, long pepper, sandal-wood and indigo occur in the former, and foreign cotton stuffs in the latter. But they cannot, unless corroborated by further evidence, be taken to have been imported from South India.[26]

ii. Imports into South India.

The positive evidence in regard to the import of goods is surprisingly little. The only mention is that of Abū Zaid; who says that emeralds used to be imported from Egypt mounted as seals and enclosed in boxes; as also coral and the stone dahnaj (a stone resembling the

[24] Ibn Khurdādba, Elliot, *History*, I, p. 15.

[25] Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, p. 19.

[26] We have the valuable support of Hirth and Rockhill, the learned editors of Chau Ju-Kua, who say that many of the products mentioned relate to India (Chau Ju-Kua, *Chu-fan-chï*, p. 16 n.); but they too do not say that they were from South India.

emerald), but "this trade has now ceased".[27] It is likely that at least a portion of the trade in precious stones had been diverted to Ceylon; Abū Zaid mentions[28] the fact that in the mountains of Sarandib, they find precious stones of various colours, red, green and yellow, and it is likely that merchants from South India had part of their supply from that island; this receives additional support from the fact that in early Cōḷa times, great facilities were afforded for free communication between India and Ceylon;[29] further it seems clear that this trade was largely manned by mariners from this country, the Singhalese, in ancient and modern times alike, having shown an apathy in all matters[30] connected with navigation.

Commercial communities.

The demand for goods is the basis of commerce; next in importance are the commercial communities engaged in trade. Hence our next question, who were the commercial communities engaged in commerce at the beginning of the tenth century?

(a) On the West Coast—i. the Mahomedans.

First we take up the trade on the West Coast. It is generally assumed—though the assumption is not based on an examination of all relevant data—that throughout the middle ages, the Moors

[27] This is substantiated by Crawford, (*Researches*, II, p. 311) who says that under the Khalifs, the trade between India and Egypt seems to have been but in a languid state.

[28] Abū Zaid, Renaudot, *Ancient Accounts*, p. 83.

[29] *A.R.E.*, 1910, part i, para 8.

[30] Lindsay, *Merchant Shipping*, I, p. 155. This is certainly remarkable, as by its position and the character of its coasts, Ceylon is singularly well adapted to be the nursery of an able race of sea-men.

were the commercial community *par excellence.* A careful examination of our materials for the period shows that their control of the trade involved also a process of growth; in fact, the outstanding feature in the general position of commercial communities as far as we can gather from our authorities is the *growing* domination of the Mahomedan Arabs over the foreign trade of the country.

Growth of their power.

When the Roman Empire fell, the Arabians resumed their rank as the first commercial people, and being stimulated by the enthusiasm of a new religion which held out paradise as the sure reward of military prowess, they also became great conquerors. They spread the doctrine of their Prophet and extended the dominion of his successors from the shores of the Atlantic to the frontier of China with astonishing rapidity. Their military ardour did not detach them from their commercial pursuits but rather added new vigour to them, for as they became sensible of the enormous advantages derivable from eastern commerce, they soon entered upon the pursuit of mercantile enterprise with the same ardour which had characterized their efforts as warriors. On almost every shore of the Mediterranean sea and the Indian ocean, they either became the ruling power or established factories and were thereby enabled to command the commerce of silks, precious stones, pearls, spices and other articles of luxury.

But our authorities inform us that about the beginning of the tenth century, the Mahomedans on the West Coast of India, though pretty numerous were there as merchants only; they traded on the same footing with others and had no manner of superiority.[31] The point is of some importance as it shows that the enormous hold the Mahomedans had on the commerce of the middle ages was only beginning to grow about this time.

Their position on the West Coast of South India.

It is necessary at this stage to trace the growth of Mahomedan settlements in South India, for the settlement of a people who are, in the main, devoted to trade is an index, though a somewhat rough one, to their hold over trade.

Mahomedan settlements: factors which helped them.

Commercial voyages were not in those days so safe and so frequent wherefore the merchants were under a necessity of making a long stay at the principal ports. The princes of the land being sensible that it was greatly to their advantage to draw the trade to their ports, the merchants were everywhere kindly received. Thus it was trade that formed the Arabian colonies on the east coasts of Africa and similarly trade was responsible in part for the foundation of Mahomedan settlements on

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[31]Renaudot, *Ancient Accounts*, p. xxvii. There seems to be no clear evidence to suppose with Rowlandson, (*Tahafat-ul-Mujahidin*, p. 5) that Arab emigrants established themselves in Malabar as a conquering race in the time of the Ummayide Caliph Walid I (A.D. 705-15) for, "that the pirate Meds *alias* Tankamara *alias* Nankamara *alias* Nagamara *alias* Kurks were in some way related to the Coorgs—an inland people—or to the Malayas" is by no means certain (Logan, *Malabar*, pp. 193—94).

the coasts of south India.[32] "Religion also gave birth," says Renaudot, "to some settlements, when idolatrous princes were persuaded to *Mohamedism* by Fakirs, who ......often devoted themselves to such missions. Under these two pretences did the Mahomedans get footing in several considerable ports of the Indies".[33]

Story of their first settlements.

The exact date of the first settlements of Mahomedans on the West Coast is a matter on which we have no definite information. Sheik Zeen-ud-deen, in his *Tahafat-ul-Mujahidīn*[34] says: "As for the exact date there is no certain information with us. Most probably

[32]Previous to their conversion to Islam, the Arabs are also said to have made many settlements on the Malabar and Konkan coasts (Heeren, *Researches*, II, p. 438). Regarding the latter, Nairne says that although nothing certain can be adduced to the existence of such colonies in the Dekhan, he believes that there are sufficient reasons to believe the distinct class of Mahomedans known in Bombay as "Konkani Mussulmāns" to be descended from the old Arab settlers, (Nairne, *The Konkan, Bombay Gazetteer*, I, part ii, p. 7). In Canara also, the author of the district manual says that Arab traders were actually establishing themselves on the west coast in the 4th and 5th centuries A.D. Sturrock, *South Canara*, I, p. 218.

[33]Renaudot, *Ancient Accounts*, p. 160. "These idolatrous princes," continues Renaudot, "confined in their old superstitions were not at all scrupulous in religion but admitted all indifferently" [Renaudot, op. cit., p. 167]. This cheap sneer at the unscrupulousness of the Indian princes may not be quite warranted. It is at least possible that it was not unscrupulousness about religion but a well-minded toleration that, in part, made them welcome such traders.

[34]A work composed in the 16th century by Shaikh Zeen-ud-deen, who is said to have lived in the court of the Adilshah of Bijapur. It has been used by Logan in his *Malabar* and an English translation of it has also been done by Rowlandson (Zeen-ud-deen, Tahafat-ul-Mujahidīn (Rowlandson)). Besides these I have used in the text, a new translation of the *Tahafat-ul-Mujahidīn*, now being prepared by Mr. Mahomed Husain Nayanar, Lecturer in Arabic, Madras University, and the references are to the unpublished manuscript placed at my disposal by the Translator.

it must have been two hundred years after the Hejira of the Prophet and his companions",[35] and the same author relates the story briefly thus: "A party of Muslims came upon certain sea ports and gradually settled there. The inhabitants of these towns by degrees became converted to Islam. Thus Islam continued to be popular till the number of Muslims increased. The Muslims built cities for themselves (and lived) without oppressing the idolatrous populace in the exercise of their ancient customs."[36]

This settlement and the favour shown by the Zamorins to the Moors gave them a great sway at Calicut and upon all the coast. This same favour was also extended farther to the north in the territory of the Balharā.[37] Indeed the favour shown to the Arabs was such that the inhabitants of the Balharā's country said that if their kings reigned and lived for a long time it was solely in consequence of the favour shown to the Arabs.[38] "In truth, there are no princes," says

[35] Zeen-ud-deen, *Tahafat-ul-Mujahidin*, (unpublished) Ch. 2, p. 7. That this date is only approximate may be seen from the fact that "an inscription on a Mahomedan granite tombstone still standing at Pantalāyani-Kollam [Malabar district] recites, after the usual prayer, that 'Āli-ibn-Udthormān was obliged to leave this world for ever to the one which is everlasting, and which receives the spirits of all, in the year 166 of Hejira, so called after Muhammad the Prophet left Mecca for Medina" (Logan, *Malabar*, I, p. 195).

[36] Zeen-ud-deen, *Tahafat-ul-Mujahidin*, (unpublished), p. 4. The story is given in detail, later, ch. ii of the same book, and also in Barros, in his *Decadas*, I, Bk. ix, Ch. 3. The latter has also been translated and inserted as an appendix in Barbosa, *An Account*, II, pp. 239 ff.

[37] *Infra*, pp. 506—07.

[38] Sulaimān, Elliot, *History*, I, p. 4.

Sulaimān,[39] "more heartily affectionate to the Arabs; and their subjects profess the same friendship for us." But the point to note is that though they were in great favour with the princes and were very rich, they were never considered as *the predominant* part as they had not obtruded themselves by conquest.[40]

Their growth.

A hundred years after Sulaimān, their position had become fairly well established. We find from the narratives of Mas'ūdī[41] who wrote about the middle of the tenth century and of Ibn Haukal, also an Arabian traveller, who visited India a short time after Mas'ūdī that the Arab name was held in high respect in the country. They both agree that Mahomedanism had begun to develop itself. The Mussulmans had erected mosques, and were in the habit of publicly celebrating their five prayers in the day.

Its importance.

The importance of this has scarcely been emphasized. Far from being the carriers of the merchandise of the East across the Indian Ocean, now, in Southern India they also began to distribute the merchandise; this was an important step in helping them to get better control of the trade.

ii. The Venetians.

While the Mahomedans were getting better control of the distribution of the merchandise on this side of the sea, it must be

[39] Sulaimān, Renaudot, *Ancient Accounts*, p. 15.

[40] Renaudot, *Ancient Accounts*, p. 160.

[41] Major, *India*, p. xiv, Al Mas'ūdī, Elliot, *History*, I, p. 24, Al Istakhrī, Elliot, *History*, I, p. 27.

mentioned that they did not directly deal with the consumers at the other end of the commercial line in Europe. They handed over the goods to the Venetians and Genoese, who received the goods from the Mahomedans at Cairo, and helped to distribute the goods to the actual consumers. Thus these latter must also be reckoned in treating of commercial communities engaged in the trade, as they helped, though indirectly, in the stream of commerce reaching its desired end. The Venetians particularly were coming into prominence. Oaten[42] dates the rise of Venice as an important commercial power about the 9th century; about the beginning of our period, therefore, when the old route *via* Alexandria had revived in importance, Venice took a leading part in the monopoly of the carrying trade from Alexandria to the ports of Europe.

Indigenous communities: iii. the Malayālis.

It is legitimate to ask, at this stage, what part the natives of the country played in this sea-borne commerce. The question why the West Coast, particularly Malabar, should have given an asylum to the alien merchants is connected in part with the social customs of its inhabitants. The peculiar incidence of joint family ownership of property and its management by a single individual, and of inheritance and succession, apparently proved strong impediments to the growth of individual efforts and enterprise which play a large part in the development of commerce. The personal credit of a malayālee is much poorer in relation to the status

[42] Oaten, *European Travellers*, p. 15.

he holds in society.[43] This accounted in part for few malayālees taking to commerce. Hence the bulk of the trade of the region fell into the hands of the people who came from abroad and settled down there, particularly the Mahomedans, and Ceṭṭis of the East Coast.

iv. The Banias.

The same disabilities did not apply to the Banias of the northern portions of the west coast—the Konkan; for we have a distinct reference to the part that natives of this part of the country took in the sea-borne commerce. Abū Zaid remarks:—[44]

'There are certain *Indians,* who never eat two of the same dish, or upon the same table, and would deem it a very great sin if they should. When they come to *Siraf,* and are invited by the considerable merchants, were they a hundred in number, more or less, they must each have a separate dish, without the least communication with the rest'.

From the context where this passage occurs we may well say that this refers to Indians from the Konkan coast, possibly the same as Banias referred to later by Marco Polo.[45]

Among the commercial communities who were taking part in the sea-borne commerce of the west coast

[43] See Evidence before the *Madras Banking Enquiry Committee,* Vol. II, p. 371.

[44] Abū Zaid, Renaudot, *Ancient Accounts,* pp. 98-99; italics are mine.

[45] infra, ch. 5, (3).

of South India at the beginning of the tenth century, the Chinese also must be given a place.

v. The Chinese.

When the Chinese first came to the ports of South India has been the subject of some discussions;[46] there seems little doubt, however, that by the beginning of our period, the Chinese had come to the West Coast and *appear*[47] to have gone in their trading voyages farther up to the Persian Gulf. Sulaimān distinctly says that in his time the Chinese ships came to Siraf and taking their cargo, they sailed to Mascat, and then they departed for the Indies 'and first they touch at Kaucammali (i.e. Quilon);[48] and from Mascat to this place, it is a month's sail with the wind aft.'[49] This is further confirmed by the Chinese annals of the T'ang dynasty (618-907) which, in describing the course followed by the Chinese junks in voyaging to the Euphrates from Kwang Chau (Canton), say that the ships passed in front of Molai (Malé of Cosmas, Malabar) after which they coasted many small kingdoms till they reached Siraf.[50]

But while evidence to prove that the Chinese merchants took part in the foreign trade at the beginning of our period seems conclusive, it still leaves open the question whether the Chinese had permanent

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[46] See Phillips, *Mahuan's Account*, *J.R.A.S.*, 1895, p. 525, Hirth and Rockhill. in Chau Ju-Kua, *Chu-fan-chï*, p. 7. Cosmas, Yule, *Cathay*, I, p. 227.

[47] See Chau Ju-Kua, *Chu-fan-chï*, p. 15, Sulaimān, *Renaudot*, op. cit., p. 9.

[48] Ibid.

[49] Sulaimān, Renaudot, *Ancient Accounts*, pp. 8—9.

[50] See for a full description, Yule, *Cathay*, I, p. 86.

commercial settlements on the West Coast. Yule[51] refers to the allusion in the first of the ancient documents engraved on copper in the possession of the Syrian Christians and Jews of Malabar[52] to the word 'Chinese'. The passage in question is '*nālu cērikkum tani*'.[53] The word *nālu cēri* has been interpreted by the editor of the plates, Gundert, to mean the four 'classes of foreign merchants, living perhaps in different quarters of the town, such as Concanese, Guzarattis, Chinese (mentioned in the *Kēraḷōlpatti*, and Arabs or Jews'. That this reference to the Chinese in the *Kēraḷōlpatti* is mainly legendary needs no further proof than the account cited below:—[54]

"The text next diverges into a general account of the Malayāli castes and mentions among other facts that the Chinese were among the merchant immigrants, as also were "the men of *round hats*," (!) of whom there were four castes, viz., 1. *Parinki* (Portuguese), 2. *Lantā* (Dutch), *Parintirīss* (French), and *Inkiriss* (English). The various castes, including apparently the "round-hatted" Europeans, are said to have been told off to their various functions in the state by *Samkarācāryar* himself".

Whatever truth there may have been in this tradition, it is clear from the fact of the Europeans being coupled with the Chinese this cannot be accepted as

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[51] Yule, *Cathay*, I, p. 81.

[52] Gundert, *Ancient Documents*, *Madras Journal*, XIII, part I, pp. 115-46.

[53] ibid., pp. 117 and 121.

[54] Logan, *Malabar*, p. 240.

historical evidence for the existence of any considerable Chinese trading settlements at the beginning of the tenth century A.D., though it is probable that individual merchants stayed for some considerable time on the West Coast.[55]

(b) On the East Coast.

In the first half of the tenth century, then, the Mahomedans became the chief commercial community on the West Coast, the native Hindus as well as the Chinese having some part in the actual conduct of sea-borne commerce. Direct evidence of the same clearness is not available for understanding the position of commercial communities in the eastern ports. First, to take the Mahomedans, whether they had any settlement on the eastern coast at the beginning of the tenth century or they at least touched at the ports, while merely engaged in the carrying trade are the two questions we would take up. With the material that has come down to us, it is difficult to come to a final conclusion, but the available evidence may be discussed.

1. The Mahomedans.

Regarding their settlements the earliest reference we have is of about the year 1050 A.D., and that is a tradition recorded in the *Madura Country*:[56] "Tradition says that the Mahomedans first settled in Madura in the year 1050 A.D. having invaded it under the leadership

[55] Nagam Aiya states that according to the records of the Tang dynasty 618 A.D. to 913 A.D., Quilon was their chief settlement and they gave it the name of 'Mahlai' Nagam Aiya, *Travancore*, I, p. 244. But the author has not given any reference.

[56] Nelson, *The Madura Country*, part ii, p. 86.

of one Malik-ul-mulk, and that the expedition was accompanied by a great prophet called Hazarat Aliar Shāh Sahēb".

It may therefore be taken as a tentative conclusion that the Mahomedans settled in the eastern ports about the eleventh century.[57]

While settlements appear to date so late, there seems also to be little reliable evidence to show that Mahomedan traders had begun to touch at the eastern ports at the beginning of our period. The evidence that may be referred to is Sulaimān's description of the route which the Arab ships followed in their voyages to China. According to him,[57a] "you begin to enter the sea of Harkand" after Kaucammali; ships steer towards Calabar, "the name of a place and kingdom on the coast to the right hand beyond India"....... In ten days after this ships reach a place called 'Betuma'" i.e. San Thome near Madras. But it is difficult to base historical conclusions on the basis of this evidence,[58] as it has been subjected to different interpretations; even assuming that Mahomedan traders had already begun to touch at the ports on the east coast, we must take it that their

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[57] The statement in the text does not take account of the question of the settlement of the Arabs in the East prior to their conversion to Islam. See on this point, Krishnaswami Aiyangar, *Some Contributions*, pp. 331-32.

[57a] Renaudot, *Ancient Accounts*, pp. 8—10.

[58] See in this connexion Phillips, St. Thomas, *Ind. Ant.*, XXXII, pp. 1—15 and 145—60. Medlycott, *India*, pp. 150—61. D'Cruz, *St. Thomas*, in *Catholic Encyclopaedia*, Vol. XIII, p. 382. D'Cruz, *St. Thomas*, pp. 101-08.

part must have been limited. This may also be inferred from the fact that the earliest use of the Arab word Maabar with reference to the east coast is at the beginning of the thirteenth century.[59] It must be fair proof of the fact that in the beginning of our period at any rate Mahomedan intercourse with the east coast was not appreciably frequent.

ii. Indigenous communities.

Evidence is also scanty to determine the part played by indigenous commercial communities in the commence of the Coromandel coast at the beginning of the tenth century. That the Tamils had an established system of overseas trade on the east coast in the peninsula in the early years of the Christian era has been fairly well known for sometime. From the author of the Circumnavigation of the Erythraean Sea, we learn that the inhabitants of the Coromandel coast traded in vessels of their own with those of Malabar.[60] In the 5th century, the Tamils carried on their commercial relations with the people of Lower Burma or Pegu. Sir Arthur Phayre[61] notes that the people of Kalinga and the Northern Circars had commercial intercourse with Burma as the existence, in Pegu, of some coins and medals with Hindu symbols show, and from the fact that "the inhabitants of the opposite coast are distinguished by the name of *Klings* to this day." In the 8th century, the Kurumbars appear to

[59] 1203. Abd-Allatif, quoted in Yule and Burnell, *Hobson-Jobson*, s. v. Mabar.

[60] Robertson, *An Historical Disquisition*, pp. 66—67.

[61] Phayre, *Burma*, p. 31, Elliot, *Coins*, p. 135.

have formed a sort of confederate state under chiefs of their own. They are stated to have been engaged in trade, and to have owned ships, and carried on a considerable commerce by sea. Their wealth attracted the cupidity of their neighbours.[62]

But after the eighth century, striking as it may seem, we have no direct evidence left to show that the inhabitants of the east coast actually took part in the carrying trade. Intercourse there must have been; recent research points to the fact that the coasts of the Indian Archipelago were studded with Hindu colonies, and, under normal conditions, intercourse was kept up between the mother country and the colonies. This intercourse, however, seems to have been, in the main, cultural; we are left in the dark regarding the part the Tamils took in the carrying trade. This, coupled with the increasing appearance of the Arabs in the eastern seas alluded to above, leads one to a tentative hypothesis that while the commercial activity of the Tamils in all probability continued, nevertheless it was beginning to decline about the beginning of the tenth century; and it required the strong navy of the later Cōḷas to place it on the same footing as it was before the competition of the Mahomedan Arabs.

We have tried to cite the available evidence regarding the demand for goods which is the basis for the exchange of goods; we have discussed at length the position of commercial communities; the next aspect of commerce is the ports or the outlets for trade on the coasts of South India.

Ports.

[62] *Mirāsi Right*, pp. 229 ff.; Elliot, *Coins*, pp. 36—37.

Taking each port or group of ports in turn and pointing out the facilities available for traders, we shall incidentally be helping to indicate the position of commerce on these coasts. The names we meet with in our authorities are not all familiar to us, and some discussion is necessary in the task of their identification with their modern representatives, and a few apparently are not identifiable, but the outlines are fairly bold and a survey may well be attempted.

West Coast.

Our starting point is Broach at the mouth of the Narbada. We have a mention of it by Ibn Khurdādba[63] in his Book of Roads and Kingdoms, about 900 A.D. He knew it by its ancient name of Barūh.

That his geographical knowledge of this coast was apparently not well-defined is clear from the fact that he places it as a part of Sind, but this is a mistake which he commits in respect of a still more southerly port, Sindān and the lack of clearness in respect of location can well be understood as he was one of the earliest geographers almost contemporary with Abū Zaid.

The next group of ports we meet with are in what the Arabs call the Kingdom of Balharā, the Konkan.[64]

The king of this country seems from all accounts to have been specially favourable to the alien traders. In 943 A.D. Al Mas'ūdī writes that of all the kings of Sind and India there was no one who paid greater respect to

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[63] Ibn Khurdādba, Elliot, *History*, I, p. 14.

[64] supra, p. 496.

the Mahomedans than the Balharā. In his kingdom Islam was 'honoured and protected'.[65] The favour shown to the Arabs was necessary to attract foreign traders to his ports, for Konkan was the home of piracy; and if foreign merchants frequented its ports,[66] the broad-minded toleration of its kings was largely responsible for it.

The Arab travellers mention in different contexts Saimūr, Sūbāra, (Sūrabāya), Tāna, Sindābūr and Sindān. The most northerly of these is undoubtedly Sūbāra which may be identified with Surat.[67] Passing South we come to Sindān—identified with Sanjan.[68] Teak trees and canes are mentioned as the special products of Sindān and were partly exported to Siraf on the Persian Gulf. Somewhat later Idrīsī calls the Konkan the country of the Sadj or of the teak, 'from the forests of that valuable wood which crown the western slope of the chain of the Ghāts.'[69] Next is Tāna, probably the only one of the group which has preserved its ancient name. It is quite an interesting fact that from Mas'ūdī's time onwards, we find no mention of Kalyān

[65]Al Mas'ūdī, Elliot, *History*, I, p. 24. Sulaimān, Elliot, *History*, I, p. 4.

[66]Sulaimān, Abū Zaid, Al Mas'ūdī and Al Istakhrī all agree in saying that the Arab traders frequented the ports of the Konkan; see also Nairne, *The Konkan, Bombay Gazetteer*, I, part ii, pp. 3—4.

[67]Elliot, *History*, I, p. 403. Istakhrī has it Sūrabāya [Al Istakhrī, Elliot, *History*, I, p. 30.]

[68]For references and identification see Ibn Khurdādba, Elliot, *History*, I, pp. 14—15, 30, and Elliot's comments thereon; also Yule and Burnell, *Hobson-Jobson*, s. v. Saint John's.

[69]Major, *India*, p. xxvi.

which is in close vicinity to it and which up to the 9th century[70] had figured as an important place; the suggestion may be ventured that Tāna was beginning to take the place of Kalyān.

Passing on from Tāna, we come to Chaul, a place of some importance in the tenth century.[71] From Chaul, we have to come further down to Goa to find another important port, known generally to our travellers as Sindābūr.[72]

The next large group of ports on the west coast was to be found on the Malabar coast. The Malabar ports had from the days of the Periplus a prosperous trade with the countries of the West, and was in fact, with Ceylon, the meeting place of the East and the West; and though about the beginning of our period the Arab mariners had begun to venture beyond, the Malabar ports still retained much of their old importance for their entrepôt trade. Sulaimān gives us some idea of this when he says that Quilon was an important port: "From hence, (Mascat) ships take their departure for the Indies, and

The Malabar ports.

[70] e.g. Cosmas, Yule, *Cathay*, I, p. 220.

[71] It is probably the Saimūr of our early travellers. See Al Istakhrī, Elliot, *History*, I, p. 27, *Bombay Gazetteer*, I, part ii, Index. s. v. Saimūr.

[72] See for identification, Sīdī Alī, *The Mohit*, *J.A.S.B.*, V, p. 564; Yule and Burnell have further shown (*Hobson-Jobson*, s. v. Sindābūr) the confusion of some Arab travellers between Sindān and Sindābūr, and he holds with ample evidence that Sindābūr must refer only to Goa—(See also Yule, *Cathay*, IV, pp. 64—66 and cf. Rawlinson, quoted *in Madras Journal*, XIV, p. 198.)

first they touch at *Kaucammali*;[73] and from Mascat to this place, it is a month's sail, with the wind aft. This is a frontier place and the chief arsenal in the province of the same name; and here the Chinese ships put in and are in safety. Fresh water is to be had here, and the Chinese pay a thousand drams for duties; but others pay only from one dinār to ten dinārs".[74] It is somewhat surprising, however, to note that we have little more mention of the numerous ports which are so frequently mentioned by the travellers of the later middle ages. Al Istakhrī, in 951 A.D., is content with the statement, 'Between Saimūr and Sarandīb, fifteen days'.[75]

Fortunately some more light is thrown on this aspect of our subject by the traditional accounts of Malabar as embodied in the *Kēraḷōlpatti* and in the *Tahafat-ul-Mujahidīn,* which, though written in the sixteenth century, professes to give an account of the early introduction of Islam into Malabar in the 9th and 10th centuries. From them we may gather there were numerous other ports, among them Paḷayangāḍi,[76]

[73]Sulaimān Renaudot, *Ancient Accounts*, pp. 8—9; the identity of this with Quiḷon admits of no doubt. Renaudot, apparently by mistake, thought it to be Cochin. Says he, 'It would seem that Kaucammali or Kaucam is Cochim or Cochin (Renaudot, *Ancient Accounts*, p. 15); but from what we know of the early history of Cochin, this identification is untenable, for Cochin was not a place of any trade previous to the fourteenth century. (See infra, ch. V. sect. (4) and Yule, *Cathay*, IV, pp. 78—79).

[74]Sulaimān, Renaudot, op. cit., p. 9.

[75]Al Istakhrī, Elliot, *History*, I, p. 30.

[76]*Tahafat-ul-Mujahidīn* (unpublished) ch. ii, pp. 3—9. Paḷayangāḍi—Chirakkal Taluk of Malabar.

Durumfattin,[77] Findareena,[78] Kodungallūr[79] and Kollam,[80]—from north to south—at which Malik Bin Dinai and party are said to have touched. Kodungallūr was undoubtedly among the most important: 'In the said port there were lying many vessels belonging to foreign trade.'[81]

The East Coast: absence of evidence.

There is no contemporary evidence regarding the ports on the eastern coast. Hypotheses drawn from evidence relating to earlier or later periods are apt to be of doubtful application. We now pass on to consider the other end of commerce, viz., the foreign ports to which goods were conveyed—the direction of South Indian trade.

The direction of South Indian trade: the West.

At the time we are speaking of, the trade of South India in the West was directed, in the main, towards the Persian Gulf, for, the old Red Sea route, for a long time closed after the Mahomedan conquest of Egypt, had been reopened just before Mas'ūdī, and the trade through it had not resumed its old proportions. In the Persian Gulf, old Basra was being slowly displaced by Siraf. This decline and rise of ports is a characteristic feature of all these coasts and in going through the accounts left by mediaeval travellers it is difficult not to be struck with this

[77] Dharmapaṭṭaṇam near Tellichery—Kōṭṭayam taluk.

[78] Pantalāyani Kollam—Kurumbranad.

[79] Cranganore.

[80] Quilon.

[81] *Tahafat-ul-Mujahidīn* (unpublished), p. 2.

fundamental fact. Ports which were important centres of trade in the tenth century are hardly even mentioned by a traveller of the next, and a study of the causes which made for the fall of the old, and the rise of new ports will occupy our attention later. Speaking of Siraf, it was displacing Basra, which, founded in 636 A.D., had taken the place of Alexandria as the centre of the Arab sea trade and the chief emporium for various ores and minerals—antimony, cinnabar, saffron and numerous other commodities. But Basra was favourable soil for civil wars. In A.D. 923 it was sacked during seventeen days. It did not, however, lose all its importance, for, as we shall see later, it continued to exist, though shorn of its former greatness. There were other ports on the Gulf—Ubulla, Mahruban, Siniz and Jannaba, but none of these seems to have attained to the position of emporium of trade with South India, and India generally, which Basra once occupied, as Siraf.[82]

Siraf was the terminus of a high road leading down from Shiraz the capital of Fars in the Middle Ages and in the tenth century, it undoubtedly occupied the premier position in the Gulf.[83]

[82]Siraf is now marked by its ruins which lie to the west of the village of Tahiri 52° 20′ E. Captain Arthur Stiffe who visited the place in 1857 has left a good description of the place in the pages of the Geographical Journal. He found that Tahiri itself was a small village inhabited by fishermen, chiefly pearl fishers of Arab descent, 200 to 300 in number, but that the ruins of the old city of Siraf could be seen extending for two miles along the shore to the west of the village—Stiffe, *Ancient Trading Centres*, *G. I.*, VI, p. 167.

[83]Stiffe, *Ancient Trading Centres*, *G. I.*, VI, p. 167.

Sulaimān's account of Siraf is worth mention, as we may infer from internal evidence that it embodies the result of his own personal observation.[84] Its importance as a port was, according to him, partly due to the fact that ships in other ports both in the Persian Gulf and in the Red sea had to face storms and were stranded in shoal waters. Most of the ships took in their cargo at Siraf, "where also they ship their goods which come from Basra or Bassora, Oman, and other parts; and this they do because in this sea, (that is, in the sea of Persia, and the Red Sea) there are frequent storms and shole water in many places. From Basra to Siraf is 120 leagues, and when ships have loaded at this last place, they there water also".[85]

The exports sent to Siraf were aloes wood (for burning), amber, camphor, precious gems, bamboos, ivory, ebony, paper, sandalwood, and all kinds of Indian perfumes, drugs and condiments.[86] The importance of this commerce is corroborated by the large amount of revenue derived from customs. Ibn al Balkhi, writing in the twelfth century, says that the total revenue of Fars, Kirman and Oman in regard to the yearly receipts from customs amounted in the reign of the Caliph Muqtadir (908—932) to 2,831, 880 red gold *dinārs*. And of this total, 'Fars with its dependencies, excluding the Siraf customs, paid in 1,634,500 *dinārs*, while Siraf,

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[84]"The distances he mentions in the Persian Gulf, for instance, are fairly accurate: "from Siraf to Basra 120 leagues and to Muscat, 200", Sulaimān, Renaudot, op. cit., p. 8.

[85]Ibid.

[86]Al Istakhri, quoted in Wilson, *The Persian Gulf*, p. 94.

with the one-tenth levied on the sea-ships paid 253,000 *dinārs*.[2]

Passing down we may mention Qais and Ormus; but at the time we are speaking of they were only of local importance. Ibn Khurdādbā,[87] though he mentions the former, has nothing to say of its sea-borne trade; Ormus, similarly, is mentioned by Istakhrī, but he speaks of it only as the sea-port for the local trade of Kirman and Seistan.[88]

On the opposite shore of the gulf, the coast of Bahrain had not any important sea-ports, the reason being, if we may believe Ibn Khurdādba, piracy was rife on the coast;[89] but south of Bahrain, Mascat was of some importance, for from Mascat, apparently, the ships stood straight for India, across the sea, and hence it was also a watering place for ships. Says Sulaimān,[90] "From thence (Siraf) (they) make sail for a place called Mascat, which is in the extremity of the Province of Oman, about 200 leagues from Siraf...... and at Mascat, take in water, which is drawn out of wells; and here, also, you are supplied with the cattle of the Province of Oman. From hence ships take their departure for the Indies".

The East.

Concerning the ports for the eastern trade, evidence is again supplied by Sulaimān: Leaving Kaucammali (Quilon) on the west coast of South India, ships made directly for

[87] Ibn Khurdādba, cited by Wilson, *The Persian Gulf*, p. 97.

[88] Istakhrī, cited by Wilson, *The Persian Gulf*, pp. 101—02.

[89] Ibn Khurdādba, quoted by Wilson, *The Persian Gulf*, p. 87.

[90] Sulaimān, Renaudot, op. cit., pp. 8—9.

Kalah in the Malay peninsula, which was reached in a month from Kulam. From Kalah four days were employed to reach Pulo Condore, from which point a month's sail brought them to Canton.[91] On arriving at Canton, each ship handed over its cargo to the agents of the Chinese government, and it was stored until the last ship of the season's fleet arrived, when three-tenths of the merchandise was retained as import duty and the balance handed back to the owners.[92]

That Canton was the chief port of this trade is also proved by the fact that Sulaimān speaks of a Muslim settlement in Canton; it had grown so important that one of the Mahomedans was appointed by the Chinese authorities to maintain order among his coreligionists and administer the law of Islam. On feast-days he said prayers, repeated the *khotba* and prayed for the welfare of the Caliph.[93]

In addition to Canton, the Arabs also seem to have touched at Zayton, near Amoy, which had commercial relations with Japan and Korea, and which therefore supplied the Arabs with the products of those countries also.[94]

Sulaimān had written in the latter half of the 9th century. In the interval before 1050 A.D., there were

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[91]He calls it Canfu—Sulaimān, Renaudot, *Ancient Accounts*, p. 11.

[92]Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chi*, pp. 15—16.

[93]Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chi*, p. 16. Sulaimān, *Renaudot*, op. cit., p. 7—'*Kotbat*'.

[94]Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chi*, p. 17. It took two centuries more, however, for Zayton to attain the importance of Canton.

troubles in China[95] which interrupted for a time established trade relations, and caused the foreigners at Canton and Zayton to take refuge at Kalah on the west coast of the Malay Peninsula. Here ships from Siraf and Oman met those which came from China, and, according to Mas'ūdī, trade was carried on in this way at the time he visited the place,[96] so that, for a time Kalah seems to have taken the place of Canton and Zayton as the destination of the ships which were engaged in the eastern trade.

Shipping.

We next come to shipping. We learn from Abū Zaid that the ships of the Indies were so put together "that the planks are not nailed (or bolted) but joined together[97] in an extraordinary manner as if they were sewn whereas the planking of all the ships of the Mediterranean sea and of the coast of Syria is nailed and not joined together the other way".[98] Later, he describes how these were built: "having felled as much wood (cocoanut) as they want, they let it dry, then strip off the leaves, and with the bark of the tree they spin a yarn, wherewith they sew the planks together, and so build a ship. Of the same wood, they cut and round away a mast; of the leaves they weave their sails, and the bark they work into cordage."[99]

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[95] Hirth and Rockhill in Chan Ju-Kua, *Chu-fan-chï*, p. 18.

[96] Ibid.

[97] The fuller treatment of shipping and navigation is reserved to sections 5 and 6; there are many points in common between the shipping and navigation at the beginning of the 10th century and the later period.

[98] Abū Zaid, *Renaudot*, op. cit., p. 60.

[99] Abū Zaid, op. cit., p. 89.

The route which the ships took, the season of voyages and the difficulties the sailors had to undergo may all be conveniently grouped under the term navigation. We have already seen that at the beginning of our period, the main channel of communication with the West was by way of the Persian Gulf; the Red Sea route, though reopened through the activity of Venice just before Mas'ūdī's time (10th century), was of secondary importance. According to Sulaimān, sailors could, with a fair wind, make the voyage from Quilon to Mascat within one month.

Navigation.

It is interesting to note that both these routes were not entirely free from troubles for the navigators. The difficulty in the first was the trouble from pirates. From Ibn Khurdādba, we learn that in his time piracy was rampant on the Bahrain coast. He says the people of Bahrain are pirates. Moreover, sailors in the gulf had also particularly to take care of 'the Hezara'. It is interesting, however, to observe that some attempt was made at lighting in the Persian Gulf. Mas'ūdī says, "There are marks of wood erected for the sailors in the sea, at Hezara, on the side of Ubulla, and Abadan, which look like three seats in the middle of the water, and upon which fires are burnt by night, to caution the vessels which come from Oman, Siraf, and other ports, lest they run against the Hezara; for if they run there, they are wrecked and lost".[100]

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[100]Mas'ūdī, Muruj adh Dhahab, II, p. 259, cited in Wilson, *The Persian Gulf*, p. 59.

The difficulty in the navigation of the Red Sea, which forms such a frequent complaint in later writings was correctly noted by Abū Zaid. According to him the danger was so great that the merchants of Siraf dared not attempt to navigate the sea: "When the Siraf ships arrive in this Sea which is to the right of the Sea of India, they put into Judda, where they remain, for their cargo is thence transported to Kahira (Cairo) by ships of Kolzum who are acquainted with the navigation of the Red Sea, which those of Siraf dare not attempt, because of the extreme danger and because this sea is full of rocks at the water's edge; because also upon the whole coast there are no kings, or scarce any inhabited place; and in fine, because ships are every night obliged to put into some place of safety for fear of striking upon the rocks; they sail in day-time only, and all the night ride fast at anchor. This sea, moreover, is subject to very thick fogs, and to violent gales of wind, and so has nothing to recommend it, either within or without".[101]

There is nothing specially noteworthy about the navigation in the eastern seas. The skippers trusted when venturing out of sight of land to the regularity of the monsoons and steered solely by the sun, moon and stars, taking presumably soundings as frequently as possible. From another source[102] we learn that it was customary on ships which sailed out of sight to keep pigeons on board, by which they used to send messages to land.

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[101]Abū Zaid, Renaudot, op. cit., p. 93.

[102]*Yu-yang-tsa-tsu*, written in the latter part of the 9th century, by Tuan Ch'ŏng-shï, Hirth and Rockhill, in Chau Ju-Kua, *Chu-fan-chï*, p. 28.

We have tried here to discuss the available evidence regarding the various aspects of the foreign trade of South India in the first half of the tenth century. In taking up, from this point, the story of commerce in the middle ages, we propose to follow the same order taking up each of the points touched here seriatim only adding a section on the part the State played in regulating commerce; and try to show how each of the aspects underwent changes in succeeding centuries as noticed in contemporary authorities. We may not expect to find vast changes; but that, with the passing of years, some modifications were perceptible is not to be doubted. These modifications were due sometimes to the changes in the habits of the people within the country, but some were also due to causes entirely foreign. In the following pages an attempt is made to place them in their proper background, as far as contemporary evidence permits.

(2) THE DEMAND FOR GOODS

The demand for goods—I. Exports—A. To the West—i. Spices, other food products and drugs—Pepper—Varieties—Quality—Ports of shipment—Customs duty—Price—Cinnamon, cloves and ginger—Minor spices—Other food products—Rice—Sugar—Wheat and millet—Cocoanut—Drugs—ii. Raw materials: dye stuffs—Woods—Metals—Ivory—Precious stones—iii. Finished products—B. To the East: influence of missions—Spices—Cotton cloth—Precious stones—II. Imports—i. Spices, drugs and perfumes—Drugs—Perfumes—ii. Raw materials—iii. Finished products: chinaware — Brassware, dishes — Cloth — Miscellaneous goods — iv. Needs of the State: precious metals—Elephants—Horses—

Nature of demand—Sources of supply—Description—Mode of transport—Prices—Effects of the trade.

The demand for goods may be treated under two heads: exports and imports. A perusal of the writings of the travellers of the period would make it clear that both in exports and imports the staples of commerce then were not the same as we meet with when we open the latest volume of the sea-borne trade of India.[103] Instead we meet with what may appear to us, at least some of them, as trivial things. In them, however, we find lists of various kinds of spices, drugs and perfumes diligently drawn up and presented to the reader with an air of seriousness which would imply that such articles were really not trivial to the people of the time; sometimes comparisons are instituted of the quality of the same product obtained from two different places. And we may be led to an enquiry into the needs of the people which have brought about this change. There is no dearth of material for a sketch though a quantitative statement would, obviously, be out of the question.

The demand for goods.

In taking up the export trade first, we may note that commodities from South India were sent to several places: Persia, Arabia and the coasts of Africa and to the countries of Europe in the west, to China in the east, and Ceylon in the south. There was also some trade carried on with the ports of North India, besides the coasting trade carried on from port to port in South India itself.

I. Exports.

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[103] See under 'Exports' Bombay.

The articles that were shipped from the ports of South India to the west in the middle ages may be classed under three heads:—

A. To the West.

i. spices, other food-products, and drugs.
ii. raw materials of industry.
iii. manufactured goods.

i. Spices, other food products and drugs.

Spices, especially pepper, were in great demand; the diet of the ordinary man was coarse, and owing to the absence of winter food for cattle, unwholesome. The desire for spices as far as the mediaeval Englishman was concerned has been well stated by Rogers: "It is difficult for us to image the eagerness with which our forefathers, as far as they could afford the luxury, sought after the spices of the East........they were excessively fond of spices, and used them, when they could be procured, in all their dishes, as the cookery books of the Plantagenets testify. Spiced wine, called Hippocras, was a present to princes; and a seat near the spice box was a greater privilege than one above the salt."[104] No doubt this correctly depicts the intensity of the demand in England and this may well be applied generally to Northern and Western Europe.

It is necessary at this stage to warn the reader against the misconception that spices entered only in the trade with Europe. Besides the volume of pepper and other spices that were shipped to China,[105] much spice was sent to the countries of Western Asia. We are told of the Moors of Ormus and other places that their

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[104] Rogers, *Six Centuries*, p. 154.

[105] *Infra*, p. 540.

food was well-spiced;[106] again, much spice was used within the country itself. Barbosa who could perhaps claim a better acquaintance with the habits of the people than any other writer of his age—he even knew the language of the West Coast people, Malayalam—says regarding the food of the Zamorin, "All the food which he eats, whether of flesh or fish or vegetable or other viands is flavoured with so much pepper that no man from our countries would be able to eat it."[107] That this description was of general application—and not merely to the nobility whom the Zamorin may be taken to represent—is clear from another remark of the same observant writer: speaking of the kingdom of Vijayanagar, he says much pepper is used here and everywhere throughout the kingdom.[108] Besides their use in dressing food, spices were used for several purposes in temples, e.g. scenting the bathing water of the gods in temples. Inscriptional references to deposits of money by pious individuals for the supply of cardamon seeds for scenting the bathing water of the gods in the Tanjore temple testify to this fact.[109] We shall see later[110] that some spices had even to be imported into the country. Here let us be content with pointing out that spices were used in diverse ways in the country, and hence only a part of the total production found a market in foreign countries.

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[106]Barbosa, *An Account*, I, p. 95.

[107]Barbosa, *An Account*, II, p. 23.

[108]Barbosa, *An Account*, I, p. 203.

[109]*South Ind. Inscr.*, II, 24.

[110]*infra*, p. 543.

When we come to details we find that such a large number of commodities went by the name of spices and allied terms, like drugs and perfumes, that some line of demarcation is necessary if we are to attain some clear idea of the trade. Mediaeval writers had not all definite schemes of classification; besides, it was also true that some articles had their use, both as spices and drugs, so that they could be correctly described under either head or both.[111] In fact whether or not a given substance should be included under the term drugs, spices, or perfumes depended upon the purpose for which it was used. Here we use the term spices for those aromatics which were in the main used in cookery, drugs for those principally used for their medicinal value, and perfumes for those mainly used for scents.

Among spices, we may first consider pepper; for, among all the articles in demand in the West, as well as in the East, black pepper—the chief sub species under pepper—was not only the most important but—what is of greater value to our purpose,—it was also, from all accounts, practically a monopoly of South India. We have seen specific references to the export of pepper in Ibn Khurdādba and Mas'ūdī at the beginning of our period.[112]

Pepper.

[111] Sometimes the wider term 'Aromatic' was used to cover, spices, drugs, as well as medicines. This does not go against modern usage: Aromatic 'is a plant, drug, or medicine characterized by a fragrant smell, and usually by a warm, pungent taste as ginger, cinnamon, spices (Webster, *Dictionary*, s. v. Aromatic).

[112] supra, p. 489.

The localities where it was grown, and the method of its cultivation have been treated elsewhere.[113] Here we are concerned with the varieties of pepper, their preparation for export, the ports where it was shipped and the direction which the export trade took.

Varieties.

Mediaeval writers speak of two varieties of pepper, the black and the white; and this distinction introduces us to one of the most interesting phases of mediaeval ideas regarding pepper trade. Until the end of the thirteenth century, the misconception persisted that they were two distinct species—that the black was prepared out of the white or that the white was what was gathered before the pepper was fully ripe. All Idrīsī in the twelfth century distinctly says that white pepper is what is gathered as it begins to ripen or even before.[114] The idea that they were of two distinct species is given expression to by Marco Polo.[115]

But the most interesting was the attempt to derive the black from the white. Benjamin noted, "the pepper is originally white, but when they collect it, they put it into basins and pour hot water upon it; it is then exposed to the heat of the sun and dried in order to make it hard and more substantial, in the course of which process it becomes of a black colour."[116]

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[113]supra, pp. 238—42.

[114]Al Idrīsī, Elliot, *History*, I, p. 85.

[115]Marco Polo, *Travels*, II, p. 264; In those islands (of the sea of China) grows pepper as white as snow, as well as the black in great quantities.

[116]Benjamin, Major *India*, pp. xlvii—xlviii.

It appears as though it was only in the fourteenth century that correct ideas were formed on the subject. Friar Jordanus was apparently the first to refute old notions. He indignantly says, "nor are you to believe that fire is placed under the pepper, nor that it is roasted, as some will lyingly maintain"[117] and Ibn Batuta, writing ten years later in 1340 A.D., supports the indignant friar. He emphatically says that as to what some have said that they boil it in order to dry it is without foundation.[118] That this correct idea had become fairly well-known is seen from the fact that eight years later Marignolli also says there was no roasting of the pepper,[119] and he is later supported by Stefano.[120] There was another variety of the product—the long pepper.[121] This does not find specific mention of being an export from the South Indian ports.[122]

Quality.

Regarding the quality of pepper, there seems to be little doubt that Malabar pepper was superior to that of the Archipelago;[123] but even within Malabar, a word of praise was sometimes given to the pepper produced in the kingdom of Cannanore in North Malabar[124] and Hili.[125] The pepper

[117] Jordanus, *Wonders*, p. 27.

[118] Ibn Batuta (Lee), p. 168.

[119] Marignolli, Yule, *Cathay*, III, p. 217.

[120] Stefano, Major, *India*, p. 4. It need hardly be reiterated that white pepper was prepared by removing the dark outer layer of pericarp thereby depriving it of a part of its pungency.

[121] *Piper longum* or *officinarum* of the Botanists. Sanskrit *pippali*—see also Watt, *Commercial Products*, p. 891.

[122] The evidence of Varthema (*Travels*, p. 233) and Barbosa (*An Account*, II, p. 227) is not conclusive cf. also *Ep. Ind.*, VI, p. 288, line 147.

[123] Barbosa, *An Account*, II, p. 184.

[124] Barbosa, *An Account*, II, p. 83—Cananor.

[125] Marco Polo, *Travels*, II, p. 385—Eli, and Yule, ibid., p. 388.

of the latter place was according to the annals,[126] "superior to that of any other foreign port."

Ports of shipment.

The ports of shipping for pepper are dealt with fully in the section on ports; here we may point out that Quilon was the chief centre till the fourteenth century, when Goa, Cochin and Calicut became important.[127] We have not much information regarding customs duty beyond the statement that in 1349 A.D. at Calicut it was two-tenths.[128]

Customs duty.

Price.

The price of pepper also seems to have received scant notice till the beginning of the fifteenth century. In 1409 A.D., Mahuan noted that the article was sold at Cochin at 5 taels the P'o-ho[129] which would work out at less than a penny a pound.[130]

Cinnamon, cloves and ginger.

Among other major spices must be counted cinnamon, cloves and ginger. Cinnamon is spoken of as growing in the kingdom of Kulam[131] and in Malabar.[132] At the end of the fifteenth century it was plentiful at Calicut.[132a]

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126 *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 453—Hsia-li.

127 Regarding the abundance of pepper at these ports, see *Hsing Ch'a Shêng lan*, (1436), Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 452 ff.

128 *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 454.

129 Mahuan, *Account*, *J.R.A.S.*, 1896, p. 344; P'o-ho was '400 cattis of Chinese, weight'.

130 The *Poho* is taken here to represent 534 lbs., and the tael at 6 s. 8d. *J.R.A.S.*, 1896, p. 344. Pepper was apparently sold at Cochin at £1-13-4 for 534 lbs. or less than a penny a pound.

131 Benjamin, Major, *India*, p. xlviii.

132 Marco Polo, *Travels*, II, p. 389.

132a Vasco Da Gama, *The First Voyage*, p. 142.

It must be added, however, that in the cinnamon trade, Ceylon was a serious rival of Malabar; for, from all accounts, it seems fairly clear that Ceylon produced not only more of it, but a better quality, and much of the cinnamon exported from the western ports of Malabar came from Ceylon. This fact is noted in a letter of Menentillus dated 1292 A.D. forwarding a copy of a letter from John of Montecorvino: 'The cinnamon tree is of a medium bulk, not very high, and in trunk, bark, and foliage, is like the laurel;......great store of it is carried forth of this island which is hard by Maabar'.[133] Ibn Batuta also speaks of the logs of cinnamon wood being piled up on the strand as they were washed down by the torrents and adds that the people of Ma'bar and Malibar were allowed to carry them away for nothing on condition of making a present to the king.[134]

It needs only to be pointed out that only the bark of the cinnamon entered in the foreign trade, its subsidiary uses as a source of oil, and of fuel being confined to the natives of the country.[135]

Cloves formed one of the spices which were imported to the south Indian ports and re-exported. It is said to have been a product of Java,[136] Necuveran,

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[133]John of Montecorvino, Yule, *Cathay*, III, p. 62.

[134]Ibn Batuta, (Defrēmery), IV, p. 166. See Dames's comment on this passage (Barbosa, *An Account*, II, p. 112 n.) and cf. Vasco Da Gama, *The First Voyage*, pp. 77 and 142, Tennent, *Ceylon*, II, p. 6, n. 2.

[135]cf. Conti, Major, *India*, pp. 7—8, Ibn Batuta, (Defrēmery), IV, pp. 99, 166.

[136]1293 A.D. Marco Polo, *Travels*, II, p. 272.

(Nicobar islands)[137] and of the Moluccas.[138] Up to the end of the fifteenth century, however, the West received cloves only from the ports of Malabar[139] and even as late as 1504 A.D., the cargoes of cloves that went to Lisbon were shipped from Malabar.[140]

Ginger was a well known and highly priced spice in the Europe of the middle ages; it was valued also as a drug. Three varieties of this are usually found in mediaeval writings: *beledi, columbino* and *mecchino,* named after the places where they were produced. Of these the last appears to have been a native of the districts round about Mecca.[141] The *beledi*[142] was grown in the neighbourhood of Pecamuria and Helly, two cities on the West Coast and in Cochin.[143] The columbine ginger was known to Marco Polo[144] as *coilumin*—a product of the country round Coilum; it was also otherwise known as *colobi.*[145]

The places of supply would thus seem to be Malabar, Cochin and Travancore.[146] As to the disputed question

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[137]1293 A.D. Marco Polo, *Travels*, II, p. 306.

[138]1344-47 A.D. Ibn Batuta, (Defrēmery), IV, p. 243. Barbosa, *An Account*, II, p. 202.

[139]Chau Ju-Kua, *Chu-fan-chï*, p. 89.

[140]See also Barbosa, *An Account*, I, p. 92, II, pp. 227—28.

[141]Pegolotti, quoted by Yule, in Marco Polo, *Travels*, II, p. 381.

[142]The word *belledi* seems to be an equivalent of *desi* and to mean 'country' and denoted a common or inferior article, ibid.

[143]Conti, Major, *India*, p. 6, Barbosa, *An Account*, II, p. 92.

[144]Marco Polo, *Travels*, II, p. 375.

[145]Conti, Major, *India*, p. 17.

[146]It seems certain that Marco Polo's confusion of topography was responsible for his remark that ginger was produced in Guzerat; see, however, Rashīdu-d Dīn, Elliot, *History*, I, p. 67, Jordanus, *Wonders*, p. 27.

whether it was to be found north of Malabar we may venture to say that it was *not*, having for our authority the express statement of Varthema:[147] 'Here (at Cannanor) we begin to find a few spices, such as pepper, ginger'.

Ginger was 'prepared' for the export market thus: as soon as it was obtained, they cast ashes on it and placed it in the sun for three days, in which time it was dried.[148] That ginger was also exported 'green' appears clear from the interesting account, given in Vasco Da Gama,[149] of a fraud tried to be practised in the ginger trade: "It came smeared with red clay because it was exported in that manner, for with the clay it travelled better, and with more strength."

The ports of shipment were Quilon, the Malabar ports like Calicut and Cannanore, and Mangalore, 'whose merchants traded in ginger with the merchants of Persia, and Yemen,'[150] and Goa further north.[151]

Minor spices.

Among minor spices, we find mention of cardamon, mace and nutmeg.[152] Mace and nutmeg are the product of one plant, the former being the crimson net-like mantle which envelopes the hard outer shell of the

[147] *Travels*, p. 124; italics are mine.

[148] Conti, Major, *India*, p. 6.

[149] Vasco Da Gama, *The Three Voyages*, p. 184.

[150] Barbosa, *An Account*, I, p. 195 and n. 2,—Mangalor—, Yule, *Cathay*, IV, pp. 73 and 79.

[151] Barbosa, *An Account*, I, p. 178.

[152] Borax, though used also as a preservative of meat (Watt, *Commercial Products*, pp. 171—72) was reckoned mainly as a dye and drug.

nutmeg, which is separated and dried. This fact, however, was coupled with the fiction that clove and cinnamon also came from that same plant.[153] Though mace and nutmeg were exported from the South Indian ports, they do not seem to have been produced in the country to any considerable extent. Idrīsī at the beginning of the 12th century,[154] Marco Polo,[155] in the 13th and Friar Odoric in the 14th agree in saying that Java was the chief source of supply from where Arab traders got them Malabar to be re-exported to the West.

As for cardamon there is evidence that it was a native product. Idrīsī thus describes it: The cardamon grows here (Manibar, Malabar). It grows like the grains of hemp and the grains are enclosed in pods.[156]

The chief centres of growth would again seem to be the west coast.[157] It formed the staple of a considerable trade at the port of Pantalāyani.[158] There is no doubt that it formed an item in the exports from other Malabar ports; it was even carried farther north. The Malabarees carried the product to Surat from where it was exported.[159]

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[153]Ibn. Batuta (Defrēmery), IV, p. 243; see also Yule, *Cathay*, IV, p. 103.

[154]Al Idrīsī, Elliot, *History*, I, p. 89.

[155]Marco Polo, *Travels*, II, p. 272.

[156]Al Idrīsī, Elliot, *History*, I, p. 90.

[157]Al Idrīsī, Elliot, *History*, I, p. 90, in the districts around Fandarina; Varthema, *Travels*, p. 124.

[158]Al Idrīsī, Elliot, *History*, I, p. 90—Fandarīna.

[159]Barbosa, *An Account*, I, pp. 127—28.

The spice trade has occupied much of our attention partly because we have ample evidence to consider in detail this important aspect of mediaeval trade. Spices, however, were only auxiliaries of food or preservatives. There were other food products themselves which were exported from South Indian ports, though these do not seem to have been destined for Europe. Among such we may reckon, millet, *muruary,* rice, tamarind, wheat, *arapatan,* certain nuts particularly cocoanuts and some oils including cocoanut oil and gingelly oil.

Other food products.

Rice.

Rice, millet and wheat are said to have been available at Melinde, as they were taken by Moorish merchants from South India.[160] Aden also received a 'great store of rice' from Chaul, Dabul, Bathecala, and Calicut.[161] That at least a portion of this rice was intended for consumption in Arabia is clear from the statement of the same author that the country dealers of Xaer purchased it from the Moors of Chaul, Dabul, Bathecala and Malabar and took them to Aden and so to the whole of this part of Arabia.[162] Ormus also received a great store of rice from Bathecala[163] and from Goa.[164]

There is an interesting point regarding the export of rice by Malabar merchants; for, all the rice exported

[160]Barbosa, *An Account,* I, p. 23.

[161]ibid., p. 56—Barbosa has Baticala.

[162]Barbosa, *An Account,* I, p. 64.

[163]Barbosa, *An Account,* I, p. 188.

[164]ibid., p. 178.

by them was not grown in Malabar. While rice is said to have been exported from the ports of Malabar to Ceylon[165] and other places, Malabar is said to have imported rice from Mangalore.[166]

The fact seems to be that Malabar required more of the black rice which was comparatively cheaper.[167] Rice was also exported from other parts of South Canara particularly Bacanor and Barçalor; part of the rice exported to Aden was the coarse black rice, which, according to Barbosa, was better and more wholesome than the white:[168] "Many ships from abroad, and many as well of Malabar, take in cargoes thereof, and, (after it has been husked and cleaned, and packed in bales of its own straw, all of the same measure to wit, each bale containing four alqueires and a half and worth from a hundred and fifty to two hundred reis) take it away..... Great store thereof they carry hence to Ormus, Aden, Xaer, Cananor........"

Sugar.

Another food product exported was sugar. Bathecala was a centre for the supply of powdered sugar.[169] They knew 'not how to make it into loaves and they wrap it up in small packets as it is in powder'; an *arroba* of this sugar is worth 240 *reis* more or less.[170]

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[165]Al Idrīsī, Elliot, *History*, I, p. 90. Varthema, *Travels*, p. 192: The kings of this island are tributes of the king of Narsinga, on account of the rice which comes there from the mainland.

[166]Barbosa, *An Account*, I, p. 128.

[167]ibid., p. 195 and Dames, ibid., n. 1.

[168]Barbosa, *An Account*, I, pp. 195—96.

[169]Barbosa, *An Account*, I, p. 188.

[170]Here the *arroba* may be taken as 28 lbs.. Dames, ibid., n. 1. 240 *reis* were equal to 5s. 7d. of modern English money (See Dames, ibid., p. 191 n. 1). So the powdered sugar sold at 2 11|28d. per lb.).

While dealing with sugar it must be said that Bengal was a competitor of South India in the supply of sugar to different parts of India, Ceylon, Arabia and Persia.[171]

Wheat and millet. Wheat and millet are said to have been imported to Melinde in Africa[172] (along with rice and millet)[173] by merchants of South India and, if we may believe Barbosa, much of the wheat was produced in Guzerat,[174] and in the country round Dabul.[175]

Cocoanut. Among other food products a prominent place must be given to what mediaeval writers generally call the Indian nut, the name by which it was known to the Arabs, (al jauz-al-Hindi),[176] the cocoanut. It was grown throughout the coasts of South India and the island of Ceylon, though as an article of export it figures chiefly in the western ports. Barbosa mentions Chaul, Dabul and Bathecala and Calicut as the chief ports of export for this nut,[177] and Aden[178] and Ormus figure as the ports of destination for the nut,[179] though it is likely that it was distributed to other countries from those places.

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[171]See Barbosa, *An Account*, II, pp. 112 and 146.

[172]Barbosa, *An Account*, I, p. 23.

[173]millet=*milho grosso* is the *holcus sorghum*, the jawār or jawārī of India, Dames, ibid., p. 155, n. 3.

[174]Barbosa, *An Account*, I, p. 155—Guzarate, Guzerate.

[175]ibid., p. 165.

[176]Yule and Burnell, *Hobson-Jobson*, s. v. Coco, Cocoa, Cocoa-nut, and (vulg.) Coker-nut; Marco Polo, *Travels*, II, p. 389.

[177]Barbosa, *An Account*, I, pp. 55—56.

[178]ibid.

[179]Barbosa, *An Account*, I, p. 92.

Cocoanut was in demand at home and abroad for its manifold uses. Probably the best contemporary account is that of Friar Jordanus in 1330 A.D.[180] and his account is still substantially correct. He noted that its kernel was used as a sweet food, a milk was drawn from it 'as good as milk of almonds' and 'when the kernel waxeth harder still, an oil is made from it of great medicinal virtue'. Toddy was also prepared from it for home consumption. The Indian nut was, however, valued as an article of export because of its two other bye-products, the palm sugar and the coir. Jordanus noted: "Those who wish not to drink it so, boil it (toddy) down to one-third of its bulk, and then it becometh thick, like honey; and 'tis sweet, and fit for making preserves, like honey and the honeycomb."[181] It was called jaggery[182] and was made in the form of cakes.[183] It was prepared also from other palms like the palmyra and the caryota and was exported to the western ports.

The other important bye-product from the Indian nut was coir.[184] It was of importance in those days in the shipping industry. The cord was plaited from the

[180] Jordanus, *Wonders*, pp. 15—16.

[181] ibid.

[182] See Yule and Burnell, *Hobson-Jobson*, s. v. jaggery for derivation of the term from Sanskrit *śarkara*, konkani *sakkarā*, Malayalam cakkarā, meaning sugar.

[183] *Roteiro de Vasco da Gama*, 94, quoted in Yule and Burnell, *Hobson-Jobson*, s. v. Coco, Cocoa, Cocoa-nut and (vulg.) Coker-nut.

[184] Properly the word which is Malayalam *kayar* from *kayaru* to be twisted—means cord itself. The word appears in early Arabic writers in the forms *Kanbar* and *Kanbār*. Yule and Burnell, *Hobson-Jobson*, s. v. Coir.

fibre of the cocoanut tree with which they stitched their ships together.[185] Jordanus[186] and Ibn Batuta[187] also noted its use in this connexion and the latter[188] also noted that the *kanbar* is better than hemp. The virtues of coir were its strength, lightness, elasticity, durability and above all its power of standing sea-water.

Drugs.

Besides spices and the few articles of food value, drugs may also be classed as articles of general utility. Scattered through mediaeval writings are names of numerous drugs exported from South India, which were used by mediaeval apothecaries in the countries of Western Asia and Europe. It is not possible, nor is it necessary, in this context to give a detailed account of each drug; all drugs were not equally well studied by mediaeval travellers, and in many cases what has come down to us is a bare mention. But that they were important articles of trade is clear from the frequency of their mention. The most important were aloes, ambergris, badru, bakam, benzoin, borax, camphor, cubeb, *gallanga,* kana, lac (alacre, lacre, laquar), musk, myrobalan, opium, rhubarb, sandalwood, spikenard, storax, tabasheer.[189]

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[185] Yule and Burnell, *Hobson-Jobson*, s. v. Coir.

[186] *Wonders*, p. 16.

[187] Ibn Batuta, (Defrēmery), IV, p. 121.

[188] ibid.

[189] e.g. see Al Idrīsī, Elliot, *History*, I, p. 93, Al Kazwīnī, op. cit., p. 96, Chau Ju-Kua, *Chu-fan-chï*, pp. 88—89, Rashīdu-d Dīn, Elliot, *History*, I, p. 67, Marco Polo, *Travels*, II, p. 375, Conti, Major, *India*, p. 17, Vasco Da Gama, *The First Voyage*, p. 141; Varthema, *Travels*, p. 106, and Barbosa, *An Account*, I, p. 56, II, pp. 77, 210.

ii. Raw materials: dyestuffs.

Under the second category, viz. raw materials, come dyestuffs, certain woods, metals and precious stones. Of these, dyestuffs seem to have been the most important. Some of these which were also used as drugs we have already considered, e.g., bakam, borax, lac and sandalwood. Of other dyes exported, the main were cinnabar, henna, indigo, myrobalan, and red kino. The dye of henna was obtained from the leaves, these being dried, sifted and reduced to a powder. Though it was grown in other places as well, it is said to have been a speciality of Saimūr.[190] The indigo use for export came mainly from Travancore. Marco Polo thus describes it: 'They have also abundance of very fine indigo. This is made of a certain herb which is gathered and (after the roots have been removed) is put into great vessels upon which they pour water and then leave it till the whole of the plant is decomposed. They then put this liquid in the sun which is tremendously hot here, so that it boils and coagulates and becomes such as we see it'[191]; and, if we may believe the same author, it was also exported to Europe in pieces or flakes of four ounces each. Myrobalan was a name applied to certain dried fruits and kernels of astringent flavour and was used in the west for tanning as well as dyeing. A 'great store of myrobalans of good quality' was available at Bathecala and the Malabar ports.[192]

[190] Al Idrīsī, Elliot, *History*, I, p. 85.

[191] Marco Polo, *Travels*, II, pp. 375, 381 and Yule, ibid., n. 4. See Madras Journal, viii, p. 198 for a modern account which agrees, in the main, with that of Marco Polo.

[192] See Barbosa, *An Account*, I, pp. 188—89, II, p. 77, Chau Ju-Kua, *Chu-fan-chï*, p. 92, *Ep. Ind.*, VI, p. 232.

Woods.

Among the woods[193] exported from the ports of South India the most important was teak; the Malabar teak was famous for its quality; the favourable climatic conditions of the region enabled it to grow teak trees of a great height exceeding even a hundred cubits. Sometimes it was exported also in the form of planks. Here we may also include the varieties of canes exported from Malabar, "which are of the thickness of a man's leg" and found a market in the kingdom of Diul and Persia.

Metals.

Regarding metals used as raw material in industry, South India had need to import, rather than a surplus to export. But an exception was iron—for at Bathecala ships from Ormus were seen taking cargoes of iron besides white rice and powdered sugar.[194]

Ivory.

Elephants' teeth can also be classed as raw material as it was used in ornamentation; the main port to which it was exported was Ormus.[195] For the finer kinds of ivory, however, merchants had to go to Africa: the African ivory was closer in grain and not so liable to turn yellow or to warp and split as the Indian.[196]

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[193] Barbosa, *An Account*, I, p. 107, Al Kazwīnī, Elliot, *History*, I, p. 96.

[194] Barbosa, *An Account*, I, p. 188.

[195] Marco Polo, *Travels*, I, p. 107—Hormos—Vasco Da Gama, *The First Voyage*, p. 135.

[196] See Marco Polo, *Travels*, II, p. 423, and Yule, ibid., p. 424, n. 4. 'As a rule, the nearer the equator, the larger, finer and more expensive the ivory', Watt, *Commercial Products*, p. 697.

Precious stones.

Gems and precious stones—carnelian, cats' eye, garnet and pearls—were in demand among the Moors of Arabia; Ormus also received a large supply of precious stones, including rubies, sapphires, giagonzas, amethysts, topazes, chrysolites and hyacinths; some of these were from Malabar ports, though it must be admitted[197] that merchants in Malabar got part of their supply from beyond the sea. An inscription dated 1188 A.D. from Hassan says that Chaṭṭi-Seṭṭi imported pearls in ships by sea and transported them to all sides.[198]

iii. Finished products.

The main finished products[199] exported were carpets, mats and cushions, silk and cotton goods, porcelain and leather goods. Carpets were taken to Mecca, Aden, Ormus and other parts of Arabia and Persia; the mats are described as 'beautiful', being finely woven and painted on both sides with most pleasing colours. We are told, "they work beautiful mats in red and blue leather, exquisitely inlaid with figures of birds and beasts, and skilfully embroidered with gold and silver wire. These are marvellously beautiful things; they are used by the Saracens to sleep upon, and capital they are for the purpose. They also work cushions embroidered with gold, so fine that they are worth six marks of silver a piece, whilst some of those sleeping-

[197] Barbosa, *An Account*, I, p. 92 and the Spanish version and Ramusio, cited by Dames, ibid., n. 2, II, p. 77, Varthema, *Travels*, p. 38.

[198] *Ep. Car.*, V, Arsikere 22, Chu Ju-Kua, *Chu-fan-chï*, p. 73.

[199] Marco Polo, *Travels*, II, pp. 393—98, Barbosa, op. cit., I, pp. 53—56, 64, 129—30, Varthema, op. cit., pp. 38, 107.

mats are worth ten marks".[200] The quality of the cotton cloth has been alluded to above;[201] the main ports of shipment were Tāna, Chaul, Bathecala and Calicut. The demand came from Arabia, Africa and Persia. The dealers of the Moorish town of Xaer are said to have carried on a considerable trade in this article. They purchased the cotton garments both coarse and fine from the Moors of Cambaya, Chaul, Bathecala and Malabar and sold them to the country dealers who took them to Aden and the whole part of Arabia; the people of Zanzibar and of the neighbouring islands purchased 'very fine silk and cotton garments'; the cloth taken to Persia included taffeta, cloth of scarlet-in-grain and other colours.

A rather curious way in which the cotton goods from South India met the demand in South Africa is noted by contemporary travellers. After the entry of the Portuguese in the Indian waters, the Moors found that they could obtain the cloth from India only through the Portuguese factors. So in Sofala they began to make great store of cotton and weave it and from it "they make much white cloth, and as they know not how to dye it, or have not the needful dyes, they take the Cambaya cloths, blue or otherwise coloured, and unravel them and make them up again, so that it becomes a new thing. With this thread and their own white they make much coloured cloth".[202]

[200]Marco Polo, *Travels*, II, p. 394.

[201]supra, p. 454.

[202]Barbosa, *An Account*, I, p. 9.

Regarding porcelain we are told that the clay vessels of Kulam were sold in the cities of Persia, like those of China,[203] but the vessels of China appear to have been of better quality as the latter bore the fire better and were whiter than those of Kulam.

Leather goods were a speciality at the port of Tāna: 'There is much traffic here and many ships and merchants frequent the place—for there is a great export of leather of various kinds'.[204] In Guzerat they dressed great numbers of skins of various kinds, goat-skins, ox-skins, buffalo, and wild ox-skins as well as those of unicorns and other animals: "In fact so many are dressed every year as to load a number of ships for Arabia and other quarters".

B. To the East: influence of missions.

The export trade with China and the islands of the East was fostered by the policy followed by the kings of China in sending missions to India, which, though primarily political in character, fulfilled also a commercial purpose, and there were return missions sent from the west and east coasts of India to the 'Celestial' Emperor. A list of these is available to us;[205] in 1283, 1285 and 1287 A.D., e.g. missions reached Ma'bar and Malabar; the mission in 1285 A.D. was sent with instructions 'to look for rare and precious things', and the mission of 1287 A.D., we are told, brought back to China 'most excellent drugs' and 'he offered the

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[203] Al Kazwīnī, Elliot, *History*, I, p. 96.

[204] Marco Polo, *Travels*, II, p. 395.

[205] Rockhill, *Notes*, *T'oung Pao*, XV, pp. 430 ff.

Emperor red sandal-wood, and building materials he had bought in India with his private funds'.[206]

The articles in demand in China from South India show what a great change has come in the habits of the Chinese in five or six centuries. Marco Polo tells us that he had 'heard it stated by one of the Great Kaan's officers of customs that the quantity of pepper introduced daily for consumption into the city of Kinsay amounts to 43 loads, each load being equal to 223 lbs.'[207]

Spices.

Not only pepper but other spices were also in demand. Speaking of the kingdom of Malabar, he says, 'Coarse spices are exported hence both to Manzi and to the West, and that which is carried on by the merchants to Aden goes on to Alexandria, but the ships that go in the latter direction are not one to ten of those that go to the eastward, a very notable fact.'[208]

Again Polo estimates the tonnage of Chinese junks by the number of baskets of pepper they carried. He says they were of such large size as to carry 5000 or 6000 baskets of pepper; and "......every great ship has certain large barks or tenders attached to it......these are large enough to carry 100 baskets of pepper."[209]

If the tonnage of ships should be calculated in term of pepper, it is evident that large quantities of

[206] Rockhill, *Notes*, *T'oung Pao*, XV, p. 440.

[207] Marco Polo, *Travels*, II, p. 204.

[208] Marco Polo, *Travels*, II, p. 390.

[209] Marco Polo, *Travels*, II, p. 250.

pepper should have been carried in ships as a matter of ordinary practice. That the export of pepper to China continued down to the end of the middle ages is clear from an observation of Giovanni d' Empoli in 1515 A.D. He says that ships carried from Cochin and Malabar 15000 or 20000 *cantars* of pepper to China, worth 15 or 20 ducats a *cantar*, besides ginger (?) mace, nutmegs, incense aloes, etc.[210] Such a large use of the spices generally, and pepper in particular, would seem to be a thing of the past for, according to Williams,[211] the Chinese use little spice at the present day, pepper being chiefly used as a febrifuge in the shape of pepper-tea.

Cotton cloth.

Next in importance come cotton cloths. In the 13th century Chau Ju-Kua refers[212] to the fact that cotton cloth was exported to Sumatra (San-fo-t'si). Pegu and Siam were also customers.[213] Cloths of Mailapur and Pulicat were also found in the markets of Malacca, Pegu and Sumatra and China and they were very costly,[214] though, to the credit of the famous Dacca muslins, it must be said that Bengal cloths were in greater favour.[215]

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210 Quoted by Yule, *Marco Polo, Travels*, II, p. 239; see also Barbosa, *An Account*, II, p. 215.

211 Quoted in Marco Polo, *Travels*, II, p. 210 n. 7.

212 Chau Ju-Kua, *Chu-fan-chï*, p. 88. He calls the product *tou-lo mièn*.

213 Barbosa, *An Account*, II, pp. 182, 164—Barbosa calls them Peeguu and Anseam respectively.

214 ibid., and pp. 132, 173, 215.

215 Barbosa, *An Account*, II, p. 146.

Precious stones of good quality were also well in demand. Polo tells us that the flower of the diamonds and other large gems, as well as the largest pearls from the kingdom of Golconda, were all carried to the Great Kaan and other kings and princes of those regions, while those that were taken to the West were only the refuse, as it were, of the finer and larger stones.[216]

Precious stones.

Before we pass on to consider the import trade, we may note the interesting fact that the ports on the West Coast were entrepôts for the Far East as well; articles like copper, quicksilver, vermilion, saffron, rosewater, opium and coloured mecca velvets were imported by the Moors of these ports from Arabia, and re-exported to Ava and the kingdoms of the Far East.[217]

We now take up import trade. This trade was not influenced solely by the home consumption; the need for re-export, as we have seen, was a factor to be taken into account in estimating the character of this trade. The imports fall under four heads:

II. Imports.

Spices, drugs and perfumes
Raw materials of industry
Finished products
Needs of the State.

It is interesting to note that as compared with the demand for spices in the West, spices do not appear to

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[216] Marco Polo, *Travels*, II, p. 361.

[217] Barbosa, *An Account*, II, p. 159.

have been used in South India for the preservation of meat; they were used as an auxiliary of food. Many of the spices in demand were produced within the country itself; the necessity for import arose for securing a better quality and partly for re-exportation. Clove and cardamon came from Sumatra;[218] the former was also a speciality of the Moluccas. That quality was one consideration may be seen from the following statement:

i. Spices, drugs and perfumes.

'The ships that come from the east bring..... cloves and spikenard, and other *fine* spices for which there is a demand here';[219] this applied also to cinnamon. The cinnamon of Calicut "was not of so fine a quality as that brought from an island called Çillan"[220] (Ceylon)

Drugs largely entered in the system of native medicine. Many drugs were indigenous to the country. Among the imported ones, we find mention of aloe-wood, camphor, frankincense, rhubarb, gharuwood, spikenard and tutia. Aloe-wood was to some extent produced within the country as evidenced by the mention of the Saimuri aloe[221] but it was also imported.[222] The uses of camphor

Drugs.

[218] Chau Ju-Kua, *Chu-fan-chi*, pp. 88, 209, Vasco Da Gama, *The First Voyage*, p. 77.

[219] Marco Polo, *Travels*, II, pp. 389—90; italics are mine.

[220] Vasco Da Gama, *The First Voyage*, p. 77. See also John of Montecorvino, Yule, *Cathay*, III, p. 62, Ibn Batuta (Lee), p. 184, Conti, Major, *India*, pp. 7—8 for import of cinnamon from Ceylon.

[221] Al Kazwini, Elliot, *History*, I, p. 97.

[222] Ibid., pp. 95—96.

both as an incense and as an ingredient in betel chewing were well-known.[223] It was of two varieties, Malayan and Chinese. The former found mainly in Borneo and Sumatra was much more valuable than the latter, its price being estimated at 100 times that of the Chinese.[224] Being greatly esteemed by the Indians, it was 'worth its weight in silver. They carry it in powder in cane tubes to Narsyngua, Malabar and Daquem.'[225] But that the Chinese camphor was also imported is clear from an inscription dated 1244-45 A.D.[226] Of frankincense, there were two kinds, the white and the brown, of which the latter alone was produced within the country,[227] while the former was imported from the south east coast of Arabia to Tāna, particularly from the cities of Esher and Dufar. Barbosa[227a] also says the price was 150 *reis* the *quintal*. At 420 *reis* to a *cruzado*, 150 *reis* represent 3s. 6d. The *quintal* consisted of 4 *arrobas*, of 32 lbs. each, so that 128 lbs. were only 3s. 6d.

Rhubarb and gharu-wood also came from Sumatra.[228] Tutia was a product of the city of Cobinan,

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[223] Chau Ju-Kua, *Chu-fan-chï*, p. 73.

[224] Marco Polo, *Travels*, II, p. 299 and Yule, ibid., p. 304 n.

[225] Barbosa, *An Account*, II, pp. 207—08, Chau Ju-Kua, *Chu-fan-chï*, p. 88.

The fact that the Borneo camphor as exported was packed in tubes of bamboo gave rise to the curious notion that camphor was produced in the inside of a cane filling the joints between knot and knot, Ibn Batuta (Defrēmery), IV, p. 241.

[226] *Ep. Ind.*, XII, p. 197.

[227] Marco Polo, *Travels*, II, pp. 395, 442-45.

[227a] Barbosa, *An Account*, I, p. 65.

[228] Chau Ju-Kua, *Chu-fan-chï*, pp. 88—89.

north of Kerman in Persia.[229] It was a useful medicine for eye-diseases.

Perfumes.

Among perfumes,[230] saffron and rosewater were imported from Judda, rosewater from Aden, and musk from the kingdom of Ava. The musk imported from Ava was, it would appear, adulterated with powder of dry leeches: 'Having pounded the dry leeches to a powder they make it by hand into grains and taking a piece of the true musk pouch and seven or eight of the leeches they mix the whole together and make it into good musk and so good that if it came thus to our lands, they would hold it to be a piece of good fortune, for after this the dealers falsify it yet further and it is purchased for foreign lands in this city as the true musk is so strong that if you put it near the tip of your nose it makes you sneeze violently and blood flow from your nostrils'.

ii. Raw materials.

Of raw materials ivory came from Africa—near Sofala, Melinde, Magadoxo, Berbera—and it is said that merchants made large profits from this trade; coral came from Mecca and Aden; and wax from Magadoxo. The dyes imported for the manufacture of cloth were Verdegris, madder, vermilion and an auxiliary, alum. Verdegris came from Judda, madder and vermilion from Aden, alum from Mecca and Aden. Of metals, copper, quicksilver, gold, silver, lead, iron and tin were in part imported, and in so far as they were used in making vessels, they may be considered raw materials of

[229]For its preparation, Marco Polo, *Travels*, I, p. 125.
[230]Barbosa, *An Account*, I, pp. 46, 47, 56, 130, II, pp. 159—61.

industry. Copper, quicksilver, gold and silver came from Judda, and were carried by the merchants of Aden; copper, gold and silver came also from the East,[231] lead from Mecca and Aden. The trade in these was considered lucrative.

Precious stones may also be classed as raw materials to the extent they were used in jewellery. While pearls formed one item of export from the ports of South India,[232] certain varieties of pearl were also imported. The imported ones were the product of the Bahrein fishery near the Persian Gulf: "Near Julfar was a very great fishery, as well of seed pearls as of large pearls, and the Moors of Ormus came hither to buy them and carry them to Calicut and other places and derived large profits from the trade." Of precious stones, the country had diamonds; others[233] were brought from Pegu, from Ava, where the precious stones rubies and spinels were found in abundance, and kept a monopoly by the king of the land, and from Ceylon, where rubies, sapphires, garnets and cats' eyes were found in plenty.

Among the finished products of industry imported were the China pottery, brassware and dishes, cloths of various kinds and opium.

iii. Finished products: chinaware.

The demand for chinaware was partly due to the good taste of the

[231]Marco Polo, *Travels*, II, pp. 389—90. Barbosa, *An Account*, I, pp. 47, 56, 130 and 202—03.

[232]supra, p. 542.

[233]Chau Ju-Kua, *Chu-fan-chï*, p. 73 and Hirth and Rockhill, op. cit., p. 3, Rashīdu-d Dīn, Elliot, *History*, I, p. 70, Conti, Major, *India*, p. 7, Barbosa, *An Account*, I, p. 202—03.

Mussulman merchants who had settled on the coasts. We are told,[234] "The Moors who dwell....are wealthy and distinguished, fair in colour and of gentle birth. They have good houses well kept and furnished. They use, in the front room of their houses, to have many shelves all round, the whole room being surrounded by them as in a shop, all filled with fair and rich porcelain of new styles". The china mania was also due to the good quality of the product. Ibn Batuta[235] considered it the finest of all pottery ware; it was considered a nice present for kings. The minister of Muhammad Shah gave his master presents including 100 pieces of superb China.[236] The superior quality came from the fact that the clay of China was better than that of Kulam and bore the fire better; moreover the vessels of Kulam were whiter than all others.[237]

Brassware, dishes.

Along with these may be included brassware[238] imported from China even as late as the end of the fifteenth century and also plates and dishes called *dest*. They were composed of cane, the fibres of which were platted together in a wonderful manner, and then covered with a brilliant coat of red lacker. Ten of these plates made a set, one fitting inside the other and so fine were they that 'when you see them you would take the

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[234]Barbosa, *An Account*, I, pp. 147—48.

[235]Ibn Batuta (Defrēmery), IV, p. 256: "C'est l'espèce la plus belle de toutes les poteries".

[236]Gribble, *A History*, I, pp. 120—21.

[237]Al Kazwīnī, Elliot, *History*, I, p. 96.

[238]Vasco Da Gama, *The First Voyage*, p. 131.

whole set for but one plate'. There were also large dishes or trays made with the same cane work. They were so good that they did not break if they tumbled and one could put hot things into them without spoiling or in the least affecting their colour.[239] These plates are also mentioned by the Archbishop of Soltania, Circa 1330.[240]

Cloth.

It is interesting to reflect that in spite of the fame which the cloth of South India had attained in the middle ages, some finer varieties[241] had to be imported e.g. scarlet cloth; camlets and taffetas came from Judda, coloured Mecca velvets from Aden, woollens from Aden, and linen from China. Silk goods came from Judda to Calicut and other ports. The extent of luxury in silk goods can be realized when we know from Paes that silk was used even in the equipment of horses. The reins of the horses were not of leather but of silk twisted into ropes; others had trappings of Mecca velvet, which was velvet of many colours with fringes and ornaments, others had them of other silks, such as satins and damask, and others of brocade from China and Persia.[242] It is difficult to estimate the relative quantity of silk goods which came from the East and the West; it is permissible, however, to infer that the commercial policy of the Chinese government had occasionally the effect of lessening the

[239] Ibn Batuta (Defrêmery), IV, pp. 292—93, Yule (*Cathay*, IV, p. 135), calls them *dast*.

[240] Archbishop of Soltania, Yule, *Cathay*, III, p. 99.

[241] Vasco Da Gama, *The First Voyage*, p. 131. Barbosa, op. cit., I, pp. 46—47, 56, 107.

[242] Paes, Sewell, *A Forgotten Empire*, pp. 275—76.

supply from the East. Private trading in silk thread, satins, gold brocades was sometimes prohibited. In 1296 A.D. Government endeavoured to limit the trade with Ma'bar, Kulam and Fandaraina to the small sum of 50,000 *ting* worth of paper money.[243]

Miscellaneous goods.

Besides these, a few miscellaneous articles also came from the West. Opium came from Berbera in Africa and Aden. There was some opium locally made, but apparently it was not so fine as the imported one from Aden.[244] Raisins and dates also came from Arabia; they were used in the preparation of vinegar.

iv. Needs of the State: precious metals.

The imports, in the main, intended to meet the needs of the State were precious metals, elephants and horses. Mahomedan writers of the period mention the fact that merchants of all countries never cease to carry pure gold into the country and bring back in exchange commodities of herbs and gums.[245]

Gold in ingots[246] 'coined and to be coined came from Aden, Melinde, Magadoxo, Berbera in Africa and from China'; silver also came from the East.[247]

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[243]Rockhill, *Notes*, *T'oung Pao*, XV, p. 425.

[244]Barbosa, *An Account*, I, p. 129.

[245]Ahmad, Elliot, *History*, III, p. 583. Wassāf, Elliot, *History*, p. 30.

[246]Gold and silver were no doubt used for currency and industrial purposes; such specification can hardly be made in the economy of the middle ages; hence they are treated here under one heading, though to be exact, one should include it under 'Raw materials' (supra, p. 545) as well.

[247]See Marco Polo, *Travels*, II, pp. 389—90. Barbosa, op. cit., I, pp. 23, 31, 34, 56, 130.

The policy followed by the government in China, towards the end of the thirteenth century, checked the inflow of these metals from China; in 1296 A.D., the exportation of gold and silver was forbidden,[248] and it is likely that the country turned more and more to the west for the supply of the precious metals.

Elephants.

The use of elephants in warfare has well nigh been given up, but in the warfare of the middle ages they played an important part. Chau Ju-Kua tells us, no doubt with some exaggeration, that 'the government of the Cōḷa dominions owned sixty thousand war-elephants'.[249] Elephants could be obtained in the country—especially from Ma'bar,[250] but apparently they were not sufficient to meet the demand; hence they were imported by sea. An inscription from Hassan,[251] Mysore, refers to a merchant 'who imported elephants in ships by sea and sold them to kings.' Ceylon and Pegu were the chief sources of supply. The fame of Ceylon for elephants is of ancient date.[252] We are told that the king of the land had a monopoly of the trade; he sold them to the merchants of Coromandel, of Narsyngua, (Vijayanagar), Malabar, Daquem, and Cambaya who came hither to seek them;[252a] they were ten and eleven cubits

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[248] Rockhill, *Notes*, *T'oung Pao*, XV, p. 425.

[249] Chau Ju-Kua, *Chu-fan-chï*, p. 96.

[250] Amīr Khusrū, Elliot, *History*, III, p. 550.

[251] *Ep. Car.*, V, Arsikere 22—1188 A.D.

[252] VIth Century: Cosmas, Yule, *Cathay*, I, p. 230, Xth Century: Ibn Khurdādba, Elliot, *History*, I, p. 13.

[252a] Barbosa, *An Account*, II, p. 113.

high[253] and were greatly esteemed by the kings of India'. They 'keep them for war and to labour on various tasks. Some are very tame and have as much sense and understanding as men'. It is noteworthy that two standards were applied in estimating the price of elephants: one was according to height;[254] another was the training which they had received: "The best and most thoroughly trained are worth a thousand or thousand five hundred cruzados, others four or five hundred according to their training".[255] The elephants from Pegu were also well trained: "It is their rule to take one every day which are sent to be trained, and thus they ever have a great number which they sell in many lands, but most of them in the kingdoms of Narsyngua, Malabar and Cambaya".[256]

It is interesting to note, with reference to the import of elephants, that we do not meet with the complaints regarding the ignorance of people in their management, which are so frequent as regards horses.[257] The treatment of elephants had apparently been perfected into a scientific system. We are told 'of one who put to shame the learned by his insight into the essence of the management of elephants, and was

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[253] Ibn Khurdādbha, Elliot, *History*, I, p. 13.

[254] Cosmas, Yule, *Cathay*, I, p. 230, Al Idrisī, quoted by Yule, in *Cathay*, I, p. 230 n. 3. "The Kings of India and China make a great work about the height of their elephants; they pay very dear in proportion as this attribute increases".

[255] Barbosa, op. cit., II, p. 115. In round figures, the price of a horse would be about £490 or £730 taking the Cruzado at 9s. 9d. In Vijayanagar, the price varied from £730 to £975. ibid., I, p. 210.

[256] ibid., pp. 155—56.

[257] infra, pp. 555-56.

himself the author of a treatise on a system of the treatment of elephants'.[258]

Horses.

In the history of commerce of the middle ages, the import trade in horse plays a prominent part, and we may consider at some length the nature of the demand for horses, the sources of supply, the mode of transport, and the prices paid.

Nature of demand.

The effective demand for horses arose from two causes, positive—the requirements of the army, and negative—the lack of proper management of the horses which necessitated the constant renewal of the supply every year. Under the Cōḷa and Pāṇḍya rulers, and later under the Vijayanagar and Bahmani kings, cavalry formed an important wing of the army. As to the Cōḷas we have no information regarding the number of horses employed in their armies, but the fact that they were employed is clearly mentioned: the great army of Kulōttunga Cōḷadēva 'possessed excellent horses resembling the waves of the sea';[259] for the Pāṇḍyas we have the statements of Marco Polo and Wassāf[260] that ten thousand horses were required every year. "It was a matter of agreement that Maliku-l Islām Jamālu-d dīn and the merchants should embark every year from the island of Kais and land at Ma'bar 1400 horses...... It was also agreed that he should embark as many as he could procure from all the isles of Persia, such as Katīf,

[258] *Ep. Car.*, IX, Nelamangala 60—gaja-mata.

[259] *South Ind. Inscr.*, II, 58, lines 39—42.

[260] *Travels*, II, p. 340, Wassāf, Elliot, *History*, III, p. 33.

Lahsā, Bahrein, Hurmuz and Kulhātū........ It is related by authentic writers, that in the reign of Atābak Abū Bakr, 10,000 horses were annually imported from these places to Ma'bar, Kambāyat, and other ports in their neighbourhood".[261] Indeed, the kings were prepared to accept a condition that if any horse should sustain any injury during the voyage or should happen to die, the value of them should be paid from the royal treasury.[262] This trade, moreover, was protected by the grant of favourable concessions to the agency.[263] The king gave orders that whatever commodities were imported from the remotest parts of China and Hind into Ma'bar, his agents and factors should be allowed the first selection until which no one else was allowed to purchase. When he had selected his goods, he despatched them on his own ships or delivered them to merchants and ship-owners in the island of Kais. There also it was not permitted to any merchant to contract a bargain until the factors of Maliku-l Islam had selected what they required and after that the merchants were allowed to buy whatever was suited to the wants of Ma'bar.

In the fourteenth and fifteenth centuries the scene of demand changes from the east and south of the peninsula to the centre and north of the Dekhan. The strength of the cavalry in Vijayanagar may be gauged from the remarks of Nuniz:[264] "The king every year

[261] Wassāf, Elliot, *History*, III, p. 33.

[262] Ibid.

[263] Ibid., p. 35.

[264] Nuniz, Sewell, *A Forgotten Empire*, p. 381.

buys thirteen thousand horses of Ormus, and country-breds, of which he chooses the best for his own stables, and gives the rest to his captains." According to one estimate[265] the cities of Arabia alone supplied two thousand horses at the beginning of the sixteenth century. It is interesting to note that the kings of Vijayanagar accepted the same condition as the Pāṇḍyan king: "He took them dead or alive at three for a thousand *pardaos*, and of those that died at sea they brought him the tail only, and he paid for it just as if it had been alive."[266]

The entry of Portugal brought into clear relief the importance of the horse trade for both the Empire of Vijayanagar and the Dekhan kingdoms. Albuquerque knew that the Dekhan countries were dependent for good horses on the trade with the Persian Gulf, both the Adil Shahis and the kings of Vijayanagar competing to get control of the supply. The capture of Ormus and Goa by Albuquerque gave the Portuguese the power to divert the whole trade to the latter place and to make their own terms with the rival powers;[267] it is a significant fact that in 1514 A.D. Kṛṣṇa Dēva Rāya offered Albuquerque £20,000 for the exclusive right to trade in horses, but the Portuguese governor with a keen business eye refused the offer.[268]

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[265] Barbosa, op. cit., I, p. 94.

[266] Nuniz, Sewell, *A Forgotten Empire*, p. 307.

[267] See Barbosa, op. cit., I, p. 189; Instructions to Fr. Luiz, ambassador to Kṛṣṇa Dēva Rāya by Albuquerque, quoted in Heras, *Early Relations*, *Q. J. M. S.*, XVI, p. 67.

[268] Sewell, *A Forgotten Empire*, p. 127.

So far we have been concerned with the positive side of the demand for horses ; the negative aspect lies in the want of proper management of the horses and to the lack of attention paid to the breeding of horses within the country. The want of proper management was so serious a defect that out of the 2000 horses imported by one king, there were not one hundred left[269] by the end of the year. Bad feeding was one of the causes which contributed to their death. They fed their horses with boiled rice, boiled meat and various other kinds of cooked food. The bad feeding was remarked upon by writers in the succeeding centuries as well. 'It is a strange thing', writes Wassāf, 'that when these horses arrive there, instead of giving them raw barley, they gave them roasted barley and grain dressed with butter and boiled cow's milk to drink'.[270] Nikitin also noticed this: "Horses are fed on peas; also on *kichiris,* boiled with sugar and oil; early in the morning they get *shishenivo*".[271]

In addition to bad feeding, the native farriers did not also know to give the proper training to horses to keep them fit. We have again the evidence of Wassāf: "They bind them for 40 days in a stable with ropes and pegs in order that they get fat; and afterwards without taking measures for training and without stirrups and

[269]Marco Polo, *Travels*, II, p. 340.

[270]Wassāf, Elliot, *History*, III, p. 33. In his characteristic way he remarks:—

Who gives sugar to an owl or crow?
Or who feeds a parrot with a carcase?
A crow should be fed with a dead body,
And a parrot with candy and sugar.
Who loads jewels on the back of an ass?
Or who would approve of giving dressed almonds to a cow?

[271]Nikitin, Major, *India*, p. 10.

other appurtenances of riding, the Indian soldiers ride upon them like demons...... In a short time the most strong, swift, fresh and active horses became weak, slow, useless and stupid";[272] and the clever horse merchants not only never brought any farriers with them but also "prevented any farrier from going thither lest that should in any degree baulk the sale of horses which brought them in every year such vast gains".[273]

The result of bad feeding and bad training was that there was "a constant necessity of getting new horses annually". Besides, there was also no breeding of horses in the country. From observation Marco Polo felt that there was no possibility of breeding either,[274] 'as hath often been proved by a trial. For even when a great blood mare had been covered by a great blood-horse, the produce is nothing but a wretched wry legged weed not fit to ride.'

Sources of supply.

The countries from which horses were imported were Arabia, Syria and Turkey.[275] The Turushka horses find mention in inscriptions,[276] meaning horses from the Mahomedan countries. The particular ports which

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[272] Wassāf, Elliot, *History*, III, p. 34.

[273] Marco Polo, *Travels*, II, p. 340.

[274] Marco Polo, *Travels*, II, p. 342.

[275] Gribble, *A History*, I, pp. 120—21. Gopinatha Rao, *A Note*, (*Ep. Ind.*, XVIII, p. 73) seems to think that prior to the arrival of the Arabs on the West Coast at any rate, the source of supply for the Eastern districts was Pegu, and the Archipelago—apparently the tradition recorded in Tamil works that Manikkavasagar went from Tirupperundurai in the eastern part of the Presidency has led him to conclude that he must have gone 'to purchase horses brought down from Pegu and other places in the east'.

The available evidence does not, it seems to us, warrant this supposition. Early Tamil Literature, while it contains references to the import of horses by *sea*, e.g. *Pattuppāttu*, ix, l. 185, does not, so far as we know, specify that they came from eastern places like Pegu.

[276] 1181—87 A.D.—*Ind. Ant.*, V, pp. 48—49.

sent them appear[277] to have been Dufar, Kīs, Lahsa, Bahrein, Ormus, Kilahāt, Xaer, Jasam, Mecca and Aden. Bathecala, Goa, and Cananore were the ports where they were disembarked.

Besides import of horses by sea, merchants from Dekhan also appear to have imported horses from North India, particularly Lahore.[278]

Description.

The following description[279] of the Western horses is interesting: They had 'small heads, thin tails, deer-shaped bodies, with well-drawn up bellies', and hoofs that were as hard as steel. They were over seven feet high and in the space of a day and night could travel a thousand *li*.

Mode of transport.

The ships in which the horses were carried and the mode of transport are thus described by the Chinese traveller :—"They build ships in this country to transport horses. Their sides are of planks and they use neither nails nor mortar (to join them) but cocoanut fibre. Each ship has two or three decks with a board shed over the upper deck,........ In the lower hold of the ship they carry a mass of pressed down frankincense, above this they carry several hundred heads of horses."

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[277] Rashīdu-d Dīn, *Elliot*, History, I, p. 69. *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 618—19, Marco Polo, op. cit., I, p. 83. Varthema, *Travels*, p. 124. Barbosa, *An Account*, I, pp. 50—51.

[278] 1417 A.D.—Ferishta, *History*, II, p. 393.

[279] *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 624.

Prices.

The evidence available regarding the price of horses may be stated in tabular form: [280]

No	Date A. D.	Description.	Price.
1	1293	Persian horses ...	200 *livres tournois.*
2	1293	Persian and Arabian ...	500 *saggi* = 100 marks of silver.
3	1293	Arabian ...	100 marks.
4	1310	Arabian ...	220 *dinars* of gold.
5	1330	Arabian ...	220 red *dinars* of gold.
6	1349	......	100 to 1000 pieces of gold.
7	1504	Arabian ...	300, 400, 500, 800, *pardai.*
8	1516	Arabian ...	500 *cruzados.*
9	1516	" ...	600 "
10	1516	" ...	400 "
11	1516	" ...	300 "
12	1537	Arabian ...	333⅓ *pardaos.*

Some idea of the prices is also obtained from the duty levied on horses. In the beginning of the sixteenth century it is variously stated as 40 *cruzados* or 25 *ducats* on each horse. Indeed, the prices must be considered fairly high considering the purchasing power of money. According to Wassāf[281] this vast sum spent in purchasing horses was met in his time from the revenues of the royal estates, endowments belonging to Hindu temples,

[280] Marco Polo, op. cit., I, p. 83, II, 340, 438, Rashidu-d Din, Elliot, *History*, I, p. 69. Wassāf, Elliot, *History*, III, pp. 33—34, Varthema, *Travels*, p. 126, Barbosa, op. cit., I, pp. 61—65, 94, Nuniz, Sewell, op. cit., p. 307.

[281] Wassāf, Elliot, *History*, III, p. 33.

and from the tax upon courtezans attached to them and no charge was incurred by the public treasury.

Effects of the trade.

Some effects of the horse trade on the life of the country may now be briefly recounted. It kept up the intercourse between the Arabian coast and the South Indian ports; the control of the horse trade was a factor which helped to increase or lessen the power of the Dekhan kingdoms so much so the kings were prepared even to encourage piracy. This was undoubtedly a blot on their character. Marco Polo's statement[282] is simple and to the point:

"With the king's connivance many corsairs launch from this port to plunder merchants. These corsairs have a covenant with the king that he shall get all the horses they capture, and all other plunder shall remain with them.... The practice is naughty and unworthy of a king".

(3) COMMERCIAL COMMUNITIES

Introductory—The Mahomedans—Increase in numbers; extension of area of influence—Commercial organization—Encouragement by native kings—Mutual sympathy—The Chinese—In the western ports—Eastern ports—Decline of Chinese commercial intercourse with South India—Final withdrawal—The Portuguese—Indigenous communities—Individual adventurers—The Venetians—The Genoese—The Florentines—Commercial organization—The character of the merchant—Business ability—Commercial integrity—Mechanism of business organization—Buying in advance—Purchase on credit—Valuation of foreign commodities—Certain formalities of a business transaction—Signs and omens.

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[282] *Travels*, II, p. 395.

Introductory.

We have seen[283] that in the tenth century the main commercial communities engaged in the trade with South India were the Mahomedans, the Banias and Chettis and the Chinese; the main feature in their respective sphere of influence was the *growing* domination of the Mahomedans in this trade.

To trace the history of the commercial communities from this point through the middle ages involves a study of the changes in the sphere of influence of these communities and the causes which contributed to such changes, the entry of new powers in the field, the details of commercial organization, and an account of what we may call 'commercial morality'.

The Mahomedans.

If the influence of the Mahomedans over commerce was growing till the beginning of the tenth century, we may say that it became predominant and well established in the succeeding centuries, and was maintained till the coming of the Portuguese.

The causes which contributed to this supremacy were the increase in their numbers, the extension of the area of their influence by conquest and settlement, the better perfection of their organization, and the encouragement given to them by the princes of the land. Each of these needs some explanation.

Increase in numbers; extension of area of influence.

The first two are closely connected and may be treated together. On the West Coast in 976 A.D. there were many Mahomedans in its cities from Cambaya to Saimūr; there were many mosques in

[283] supra, ch. v, section (1).

these places.[284] By 1050 A.D. we hear of their first settlements on the East Coast under the leadership of one Malik-ul-mulk[285] and subsequent invasions led to further settlements. Two centuries later 'all the Muslims are said to have come here (Maabar) to trade,'[286] and their 'great influence'[287] is a matter of comment. A 'Saracen' became the king's chief minister and governor of the seaports of Pattan, Malipattan and Kail and a Pāṇḍya king had Mussulmans in his service[288] and by the beginning of the sixteenth century, there were in the sea ports of Coromandel many Moors, "natives of the land who are great merchants and own many ships".[289]

The evidence regarding the West Coast is also plentiful. About 1340 A.D., there were 4000 Mahomedan merchants in the city of Mangalore.[290] King Baḷḷāḷa Dēva had in his army 20,000 Mussulmans. The evidence may be carried through the fifteenth century and the beginning of the sixteenth. In 1409 A.D. there were 'twenty or thirty' mosques in Calicut.[291] In the city of Calicut there were 15,000 Mahomedan merchants,[292] a considerable number for the time; other cities on the West Coast, like Chaul and Bathecala

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[284]Ibn Haukal, Elliot, *History*, I, p. 34.

[285]*supra*, pp. 502-03.

[286]Rockhill, *Notes*, *T'oung Pao*, XV, p. 433.

[287]John of Montecorvino, Yule, *Cathay*, III, p. 63.

[288]Amīr Khusrū, Elliot, *History*, III, p. 550.

[289]Barbosa, *An Account*, II, p. 126.

[290]Ibn Batuta (Lee), p. 169.

[291]Mahuan, *Account*, *J.R.A.S.*, 1896, p. 346.

[292]Varthema, *Travels*, p. 151.

also contained 'a very great number' of Moorish merchants.[293]

It must be mentioned, lest a wrong notion should be carried, that the Mahomedans had settled chiefly in cities. We are clearly told that there were few of them in the interior.[294]

In the fourteenth and fifteenth centuries, the partial conquest of the Dekhan by the Mahomedans and the establishment of Mahomedan kingdoms had also their effect in increasing their influence over the trade of those areas.

Besides the mainland, the Mahomedans had by this time extended the area of their influence and settlement over the whole of the south and east coast of Asia including the Eastern Archipelago. In his itineracy through these regions, Marco Polo observes this fact:— in Mansul, Tauris, Persia, Yezd, Hormuz, Badakshan, Kashgar, China, Champa, Sumatra, Ceylon, Madagascar, Aden, Esher, etc. there were Moslems.[295] One fact here deserves special notice, viz. their increased hold over Ceylon. It has been recorded[296] that there were eight Mahomedan settlements along the north-east, north and western coasts of the island, among them being Trincomalee, Jafna, Manar. The settlements at Manar and Mantotte on the north-west coast from their local situation naturally became the great emporium of

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[293] Varthema, *Travels*, pp. 114, 119.

[294] John of Montecorvino, Yule, *Cathay*, III, p. 63.

[295] Marco Polo, op. cit., I, pp. 60—75, 84, 88, 108, 157, 180, II, pp. 268, 284, 288, 294, 295, 300, 303, 314, 411, 428, 438, 442, 444.

[296] Johnstone, *A Letter*, *Transactions of the R.A.S.*, I, p. 538.

the trade carried on by them with Egypt, Arabia, Persia and the coast of Malabar on one side and the coast of Coromandel, the eastern shores of the Bay of Bengal, Malacca, Sumatra, Java, the Moluccas and China on the other. They had also agencies in different parts of Ceylon. The Mahomedans engaged in the trade of the country did not belong to one stock but were recruited from various sources. This was observed by the earliest European settlers: Vasco Da Gama speaks of foreign and native Moors of Calicut;[297] and elsewhere[298] he speaks of 'white Moors', the latter being descended from the Turks, Arabs, Persians, etc. The large infusion of Western blood explains the fair complexion, which Barbosa notes, among the Mahomedan population of the Dekhan: 'They were tall, fair, well attired in rich cloth of gold silk, cotton,' etc., keeping their houses well furnished; and though they belonged to different nationalities, they were known by a common name, viz., the *Pardēsīs*,[299] i.e., aliens. The others were descended from Hindu converts: 'they were half-Hindus, and not strict in their religious observances'[300] —these were known as Moplahs[301] on the West Coast and Lubbais on the East Coast, forming a good proportion of the population, in some localities nearly one-fifth.

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[297] Vasco Da Gama, *The Three Voyages*, p. 154.

[298] Vasco Da Gama, *The First Voyage*, p. 23. Barbosa, op. cit., I, pp. 119, 174-75.

[299] Barbosa, *An Account*, II, p. 76.

[300] Amīr Khurū, Elliot, *History*, III, p. 90.

[301] (See for derivation, Varthema, *op. cit.*, p. 123 n., and Barbosa, *An Account*, II, p. 75 n. 2); see also Yule, *Cathay*, IV, p. 29.

The increase in their numbers, coupled with the extension in the area of their influence, gave the Moslem community a position of vantage which they well maintained till the beginning of the 16th century; the improvement in their commercial organization also served the same purpose. This latter took the form of the establishment of agencies in important trading centres. A glimpse of this is afforded us by Vasco Da Gama: while running down the coast he heard that the Mahomedan merchants of Calicut had agents at Mangalore and Basrur;[302] similarly in Ceylon, we hear, the merchants had agencies in different parts of the country.[303]

Commercial organization.

The encouragement given to them by the princes of the land was another potent cause in helping the Mahomedans to establish their domain over commerce. The Mahomedan traders in particular enabled the Zamorin to keep himself in touch with the rulers of Egypt, Persia and other Mahomedan states as they had commercial connexions with those kingdoms. The wealth of the kings partly lay in the customs and it was to their interest to see that the trade was developed in all possible ways. The *Āmuktamālyada*[304] advises kings to attract the merchants of distant foreign countries who imported elephants and

Encouragement by native kings.

[302] Vasco Da Gama, *The Three Voyages*, p. 399, Sturrock, *South Canara*, I, p. 68.

[303] Johnstone, *A Letter*, *Transactions of the R.A.S.*, I, p. 538.

[304] Sarasvati, *Political Maxims*, *J.I.H.*, IV, part III, p. 72.

good horses 'by providing them with villages and decent dwellings in the city, by affording them daily audience, presents and allowing decent profits'. The king should further 'arrange that the foreign sailors who land in his country on account of storms, illness and exhaustion are looked after in a manner suitable to their nationalities.'[304a] There is reason to think that this advice represents the practice of the time. We are told, "As soon as any of the merchants (foreign) reached the city, the king assigned him a *Nayre*, to protect and serve him, and a *Chatim* clerk to keep his accounts and look after his affairs, and a broker to arrange for him to obtain such goods as he had need of."[305] Besides, every consideration was paid to the prejudices and customs of the Mahomedans. In deference to their desire, Friday was respected throughout Malabar; a death sentence on a follower of their religion was never carried out without their consent and converts to their faith were not molested.[306] The special favours enjoyed by the agency at Kāyal for the importation of horses have been made known by Wassāf.[307] From Mōṭupaḷḷi, comes the inscription recording the grant of charters to the oversea traders given by the Kākatīya Gaṇapatidēva and Annapōta-Reḍḍi.[308]

304a ibid., p. 70.

305 Barbosa, *An Account*, II, p. 77.

306 *Tahafat-ul-Mujahidin*, p. 71.

307 supra, p. 553.

308 1244-45 A.D. and Śaka 1280.—*A.R.E.*, 1910, part ii, paras 45 and 61. *Ep. Ind.*, XII, pp. 188—97.

While they were allowed concessions by the princes, it must be pointed out that the success of the Mahomedans was in part due to their abstaining from interfering with the social customs of the people among whom they lived. We have the authority of Zainuddin,[309] "I would have it understood that the Mahomedans of Malabar lived in great comfort and tranquility in consequence of their abstaining from exercising any oppression towards the people of the country as well as from the consideration which they invariably evinced for the ancient usages of Malabar and from the unrestricted intercourse which they preserved with them."

Mutual sympathy.

Thus helped by their number, the extension in the sphere of their influence, the improvement in their organization and by the enlightened policy followed by the kings, the Mahomedans on the sea-board were well-established in their position. They were therefore enabled to overcome the competition of their rivals for some considerable time. Among these rivals, the Chinese come in for prominent mention.

We have seen that the Chinese were trading with the south of India at the beginning of our period; they continued to come throughout the middle ages. The evidence of Idrīsī, Marco Polo, Odoric, Marignolli, and Ibn Batuta[310] establishes this: Thus Idrīsī says, 'Broach

The Chinese—in the western ports.

[309] *Tahafat-ul-Mujahidīn*, p. 103.

[310] Al Idrīsī, Elliot, *History*, I, p. 87, Marco Polo, op. cit., II, pp. 386, 390, Ibn Batuta (Lee), pp. 172-73, Rashīdu-d Dīn, Elliot, *History*, I, p. 69.

was visited by Chinese merchants' and Marco Polo is more emphatic: 'Ships come hither from many quarters but especially from the great province of Manzi' etc. The Chinese annals of the fourteenth and early fifteenth centuries[311] also point to Chinese intercourse with many of the western ports including Quilon, Kainkolam, Cochin, Calicut, Pandarani, Cannanore, Mangalore and Honore; and invariably the goods used by the Chinese in trading were satins, blue and white chinaware, ironware, coloured beads, cloves, cardamons, musk etc.[312] The Chinese also began to frequent the eastern ports. It appears from Chau Ju-Kua[313] that about 1015 A.D. the Cōḷa king sent a mission to the Chinese court with pearls and like articles as tribute; there is no doubt that commercial intercourse also became more frequent as a result of such missions. About the end of the thirteenth century, we have[314] a description of the sea-route to China from Maabar and it is proper to infer that trade was kept up along this apparently well known route; the many embassies sent by Kublai kaan towards

Eastern ports.

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[311] Wang Ta-Yüan, *Tao i chih lio*—1349 A.D., Mahuan, *Ying Yai Shĕng lan*—1425—1432 (?), Fei Hsin, *Hsing Ch'a Shĕng lan*—1436 A.D.—see List of Authorities.

[312] Rockhill, *Notes, T'oung Pao*, pp. XVI, pp. 61 ff., 236 ff., 374 ff., 435 ff., 604 ff.

[313] Chan Ju-Kua, *Chu-fan-chī*, pp. 94—96.

[314] Rashīdu-d Dīn, Elliot, *History*, I, p. 70.

the end of the same century[315] must have turned the attention of the Chinese to Ma'bar in addition to Kaulam; Chinese ships occasionally visited Mailapur[316] in the middle of the fourteenth century; Cheng-ho visited it in 1408 and 1412 A.D.[317]

The interest of the Chinese in the eastern parts in the fourteenth and fifteenth centuries is partly explained by two facts:—they were feeling the competition of the Moslems in Western India; they were also losing control of the route across Asia to Europe, and they had to look for other outlets.[318] The former was specially felt at Cochin and Quilon. Quilon was the stronghold of the Chinese as Calicut was of the Mahomedans. When the latter first came in contact with the Chinese, they appear to have challenged their position, but unable to dislodge them from their stronghold at Quilon, they withdrew some distance towards the north and flourished at Calicut. The Chinese seem to have carried the combat to Calicut itself and achieved

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China to Ma'bar.	*Reference.*	*Ma'bar to China.*	*Reference*
1281	Rockhill, *Notes. T'oung Pao,* XVI, p. 431	1279	Rockhill, *Notes T'oung Pao,* XVI, p. 430
1285	,, 439	1280	,, 430
1287	,, 439	1283	,, 438
1290	,, 442	1284	,, 438
1291	,, 442	1286-1288	,, 440
1296	,, 443	1288	,, 441
		1289	,, 441
		1314	,, 443

[316]Marignolli, Yule, *Cathay,* III, p. 251 n. 3.

[317]Rockhill, *Notes, T'oung Pao,* XVI, pp. 82 and 83; Ma'bar is termed here So-li.

[318]Mayers, *Chinese Explorations, China Review,* III, pp. 219—25 and 321—31.

signal success for some time: 'The people of Cathay were known to be men of remarkable energy and formerly drove a first-rate trade at the city of Calicut. But (after the lapse of a hundred years) the king of Calicut having treated them badly, they quitted that city........ After that they began to frequent Mailapetam, a city subject to the king of Narasingha;—a region towards the East...... and there they now drive their trade.'[319]

Decline of Chinese Commercial intercourse with South India.

The gradual decline and final disappearance of the Chinese from the Indian waters forms an interesting chapter in the history of South Indian commerce. Two causes account for this:—i. the competition of the Mahomedans already referred to, and ii. the commercial policy of the Chinese Emperors of the period. It is a remarkable fact that mercantilist ideas which guided the commercial policy of English kings in the middle ages should have found a counterpart in the Far East. With a view to prevent the drain of cash gold and silver, in 1284 A.D., all persons, whomsoever they might be, were forbidden using their private capital in foreign trade ventures—to do so was made a criminal offence punishable by confiscation of half of the culprit's property. In 1286 and again in 1292 the private exportation of copper cash was strictly prohibited.[320] Not satisfied with these measures, private trading abroad in gold, silver, copper,

[319] Joseph of Cranganore, in the *Novus Orbis*, quoted by Yule in Marco Polo, *Travels*, II, p. 391, n. 5.

[320] Rockhill, *Notes*, *T'oung Pao*, XV, p. 425.

cash iron-ware...... was strictly prohibited. In 1296 A.D. the exportation of gold and silver was again forbidden, and to crown all, in the same year, the Government endeavoured to limit the trade with Ma'bar, Kulam and Fandarina to the small sum of 50,000 *ting* worth of paper money. In 1314 A.D. the prohibition against private trading was re-enacted.[321]

Such a restrictive policy must have had its effect in deterring Chinese commercial enterprise abroad particularly with South India.

Final withdrawal.

The final withdrawal of the Chinese from the shores of India cannot be dated with precision but the available evidence may be presented. The conclusion to which Col. Yule arrived after reviewing the evidence available to him[322] may well serve as the starting point for our discussion. He said that while he was unable to find anything definite as to the date of the cessation of the Chinese navigation to Malabar, he was inclined to place it about the beginning of the fifteenth century. He also refers to an expedition despatched by Ch'eng Tsu of the Ming dynasty (1402-24) to the countries of India, Bengal, Calicut, Ceylon, Surat, the Persian Gulf, Aden and the Red Sea about 1407-1408. "This", says Yule, "is the last notice with which I am acquainted of Chinese vessels visiting Malabar and Western Asia".[323]

[321] These regulations are given in *Yüan tien chang*, Rockhill, *Notes*, *T'oung Pao*, XV, p. 425 and n.

[322] Yule, *Cathay*, I, pp. 87-88, Marco Polo, *Travels*, II, p. 391, and p. 391 n.

[323] Yule, *Cathay*, I, pp. 87-88, Marco Polo, *op. cit.*, p. 391 n. This was written in 1866. The new edition of Marco Polo, edited by Cordier, does not contain any modification of these ideas.

Evidence in the main published since Yule's time points to some later dates which may be recorded in their chronological order:—

1409 A.D.—Mahuan[324] distinctly speaks of Chinese ships touching at Cochin. Circa 1418—"It is now about eighty years since there arrived in this city of Chalicut certain vessels of white Christians..... Their vessels have four masts......".[325] The strangers were undoubtedly Chinese. 1425-1432 A.D.—All the merchandise brought here by Chinese junks is under the control of two high officers who had brokers to come to an understanding as to prices, which are not subsequently changed.[325a]

1431 A.D.—Chinese junks might be seen, even farther away from Malabar, at Jedda.[326]

1442 A.D.—The merchants of the kingdoms of Tchin (China) Matchin (the southern parts of China) and the city of Khanbālik (Pekin) all make their way to this port (Ormus).[327]

The legitimate conclusion from the evidence appears to be that the Chinese commercial intercourse

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[324] Mahuan, *Account*, *J.R.A.S.*, 1896, p. 346.

[325] Vasco Da Gama, *The First Voyage*, p. 131 and n. 5.

[325a] *Ying Yai Shĕng lan*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 457.

[326] Hirth, *Verhandlungen*, Berlin Geographical Society, 1889, p. 46, quoted in Vasco Da Gama, *The First Voyage*, p. 132.

[327] 'Abdu-r Razzāk, Major, *India*, pp. 5-6. Yule apparently refers to this passage (but cites p. 56 obviously printer's mistake) and remarks the passage is too general to build upon. The truth contained in such a general passage, especially in the specification of a particular city like Pekin, it seems to us, is that the Chinese merchants in the middle of the fifteenth century had not ceased to frequent the Indian waters.

with West India continued well nigh to about the middle of the fifteenth century. It had almost ceased by the beginning of the sixteenth century. We are told that about 1515 A.D. Chinese merchants bought Malabar pepper at Malacca instead of at Malabar ports.[328] Rare instances of individual Chinese junks at Indian ports are seen as late as the end of the sixteenth century, particularly on the East Coast;[329] but such examples must be taken as exceptions proving the general disappearance of the Chinese from Indian waters from about the middle of the 15th century.

The Portuguese.

Towards the end of our period, and after the withdrawal of the Chinese from the Indian waters, the Mahomedans met their new rivals, the Portuguese. The rise of the Portuguese domain over Indian commerce opens a new chapter in its history and is not entirely within our province; only its beginnings need be alluded to here.

It was in 1487 A.D. that King John of Portugal sent Pedro de Covillan and Alphonzo de Payva to discover India by land. Covillan went to the cities of Cannanore and Calicut and thence to Goa; he was the first Portuguese to visit India.[330] In May 1498 Da Gama came to anchor before the city of Calicut.

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[328] Barbosa, *An Account*, II, p. 215.

[329] A ship from China and another from Japan reached Negapatam about the year 1598 (Hay, *De Rebus Iaponicis, Indicis et Pervanis*, [Antwerp, 1605,] p. 835; while Couto mentions a China junk at the same port in 1583, (Decada, X. i. 425), and another in 1585 (X. ii. 116), cited by Moreland, *India*, p. 169 n.

[330] Kerr, *A General History*, II, pp. 50-51.

The Portuguese had to break down the Mahomedan monopoly, but the Mahomedans had been with the Hindus for centuries, and had not alienated their sympathies; when, therefore, the Mahomedans determined on an active policy of opposition to the intruders, their decision met with no opposition from the Hindus. The Portuguese on their part entered upon the new career open to them with activity and ardour and made exertions both commercial and military far beyond what could have been expected from such a small kingdom, so much so they were able to overcome the opposition of the Mahomedans. In twenty years they had rendered themselves masters of the city of Malacca; in which the great staple of the trade of the time was then established; by their settlements at Goa and Diu, they were enabled to engross the trade of the Malabar coast and to obstruct greatly the long established intercourse of Egypt with India by the Red Sea. They carried on trade almost without a rival or control; they often set what price they pleased on goods which they purchased; these and other aspects of their commerce have so often been told that it is hardly necessary more than to refer to them. By the time of Barbosa, the strength of Moslem hold over the commerce had so far lessened that they even avoided the Malabar coast preferring to go by the Maldives.[331]

[331] Barbosa, *An Account*, II, p. 108. Barbosa says that the vessels of the Moors dared not 'through dread of our ships' finish their voyage to Malabar. This piece of evidence, coming, as it does, from a Portuguese is perhaps an exaggeration. There can be no doubt, however, that there is some element of truth in the statement.

Indigenous communities.

While the foreign trade of the country was mainly in the hands of aliens, the part that indigenous communities took in it was also considerable. No doubt, the practice of seafaring had some stigma attached to it: 'Seafaring men are never to be accepted as sureties, for they say that to be a seafaring man is all the same as to be an utter desperado, and that his testimony is good for nothing.'[332] But this itself is proof to the fact that natives took to seafaring and this is substantiated by a reference in the *Mitākṣarā*[333] to seafaring men: "*samudragāh.*"

Among them, the Chettis, the Banias of Gujarat, the Abraimans and the Mogeres may be mentioned. The Chettis[334] do not seem to have sailed to countries to the west of India, though they had settled in Malabar and had some part in the export and import trade of the country: 'All trading transactions are carried on by the Chetties who buy the pepper from the farmers when it is ripe, and sell it to foreign ships when they pass by. They also buy and collect precious stones and other costly wares';[335] they were also engaged by the king to conduct his trading transactions on shore. In the East, they were familiar in the Archipelago: "There are here (Malacca) also merchants (*Chetige*) of Charamandel who are very corpulent with big bellies, they go bare

[332] Marco Polo, op. cit., II, pp. 342-43 referring to Maabar.

[333] Vijñānēśvara, *The Mitākṣarā*, ii, 38.

[334] For another form of the word, e.g. *Chati*, *Chctijs*, *Chatijs* etc. see Barbosa, op. cit., II, pp. 71, 177, 240; see Thurston, *Castes and Tribes*, II, s. v. Chetti.

[335] Mahuan, *Account*, *J.R.A.S.*, 1896, p. 344.

above the waist and wear cotton clothes below."[335a] They dealt in precious stones, seed pearls and corals and other valuable goods such as gold and silver, either coined or to be coined. This was their principal trade and according to Barbosa, "they follow it because they can raise or lower the prices of such things many times". They "ever carry in their breasts great pouches in which they keep scales and weights of their gold and silver coins and precious stones.... They are great clerks and accountants and reckon all their sums on their fingers." [336]

The Banias were not so spread out like the Chettis having been more definitely localized on the West Coast; they could be met with in Cochin and in Cannanore and in Calicut, "in all which ports they traded in goods of every kind from many lands."

The Abraimans[337] came from the province of Lar and were probably the Konkani Brahmans.[338] The *Biabares*[339] dealt in " good of every kind both in the sea ports and inland, wherever their trade is of most profit. They gather to themselves all the pepper and ginger from the Nayres and husbandmen, and oft times they buy the new crops beforehand, in exchange for

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[335a]Barbosa, *An Account*, II, p. 177.

[336]Barbosa, op. cit., II, pp. 71-73.

[337]Marco Polo, *Travels*, II, p. 367 and n. 1. Lār is most probably Dwarasamudra, corresponding to modern Mysore.

[338]ibid.

[339]Barbosa, op. cit., II, p. 56. They may be identified with the Ravari Nayres akin to the *Taragan* or Mūttāns two mercantile castes in the country.

cotton clothes and other goods which they keep at the seaports. Afterwards they sell them again and gain much money thereby."[340] The Mogeres were the caste of fishermen, some of whom engaged themselves in foreign trade, were very rich and owned the ships in which they sailed and traded with the Moors.[341]

Of minor communities, we need mention only the Indian Christians, the Jews, and the Venetians particularly on the West Coast. The Christians frequented the port of Melinde and were in friendly terms with the Mahomedans of the place. Da Gama met them in 1498.[342] Regarding the Jews, Benjamin[343] about 1173 A.D. could find only about 100 in the pepper country; the Venetian merchants in the Malabar ports are referred to by a contemporary traveller:[344] "Thither go merchants often from Venice to buy pepper and ginger."

Individual adventurers.

There were, besides, several individual adventurers from different parts of the world settled in the ports. There were Turks, Persians, Kurds, Abyssynians, etc.[345]

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[340] ibid.

[341] ibid., p. 64.

[342] Macpherson, *European Commerce*, p. 13.

[343] Quoted by Thurston, *Castes and Tribes*, II, pp. 481-82.

[344] 13th century, Mandevill, quoted by Yule in Jordanus, *Wonders*, p. xv.

[345] e.g. 1481, Khwaja Mahmood, minister of Mahomed Shah was himself an adventurer from Persia. He brought with him a sum of 40,000 *larecs*, and employed it in trade etc.—Ferishta, *History*, II, p. 513.

The Venetians.

To complete our sketch of commercial communities, we must look at the other end of the line of commerce and consider those who helped to distribute them to the consumer. In the East, such a middleman community is not found as the Moslems or the Chinese themselves carried the goods to the Archipelago, China, etc. In the West, on the other hand, we find the Venetians, the Genoese, and the Florentines engaged in this trade. The struggle between the Moslems, Chinese and Portuguese in the Indian waters finds a parallel in the struggle between the Venetians, the Genoese and the Florentines in the Mediterranean. The struggle was in the main for the control of Alexandria and Constantinople, the two chief emporiums on the Red Sea and overland routes respectively.

The rise of Venice to greatness may be dated with her acquisition of the maritime cities of Dalmatia and Istria in 997 A.D.[346] and she controlled the trade of Alexandria. In the period of the Crusades, this trade was affected by the growth of Acre, which, for a time became the chief emporium in the Mediterranean for the productions of the East;[347] the Venetians, however, secured some control over this trade also, for in 1204 A.D., when the crusaders conquered Constantinople, the Venetians secured a part of the Peloponnesus, and through this means they controlled that part of the trade by the Black sea. Fifty-seven years later, however, an event occurred which affected the fortunes

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346 Lindsay, *Merchant Shipping*, I, p. 237.

347 Macpherson, *European Commerce*, p. 6.

of Venice, and this was the revolt of the Greeks to expel the Latin emperor from Constantinople. In this they were aided by the Genoese, and as a reward for their service, the Genoese received the suburb of Pera, the chief suburb of Constantinople.[348] Genoa thus became an important commercial power, through her control of Constantinople; and the rivalry between Genoa and Venice is the central feature in the commerce of the Mediterranean of the period. The Venetians, deprived of their monopoly of the overland trade, were forced to concentrate attention on Alexandria and the development of the Red Sea trade. They obtained permission from the Pope to fit out annually a specified number of ships for the ports of Egypt and Syria;[349] under this sanction, the Republic concluded a treaty of commerce with the Soldans of Egypt, on equitable terms in consequence of which the Senate appointed a consul to reside in Alexandria, and another in Damascus, in a public character, and to exercise a mercantile jurisdiction, authorized by the Soldans. Under their protection, Venetian merchants settled in each of these cities.[350]

The Genoese.

The Venetians and Genoese were thus making extraordinary efforts in order to engross the advantages of supplying Europe with the productions of the East. In 1379 A.D., however, an event happened which might be said to mark the decline of the Genoese: Genoa sustained immense loss by her unsuccessful attack on

[348] Gleig, *History*, I, pp. 312-13, Duff, *Chronology*, p. 174.

[349] Robertson, *An Historical Disquisition*, p. 91.

[350] Ibid.

Venice[351] in that year and from this time her influence in the Levant, and with it her commerce, declined.

The Florentines.

It would appear, however, as though Venice was not to be left without a rival. The republic of Florence had been growing extremely opulent, mainly through the development of banking, by means of which the money transactions of almost every kingdom in Europe passed through her hands. In 1405, the Commonwealth acquired by the conquest of Pisa a communication with the sea. Cosmo di Medici, who had the chief direction of its affairs, endeavoured to procure for his country a share in that lucrative commerce which had raised Venice above all other Italian states. With this view, he sent ambassadors to Alexandria (A.C. 1425) in order to prevail upon the Soldan to open that and the other ports of his dominions to the subjects of the Florentine republic and to admit them to a participation in all the commercial privileges which were enjoyed by the Venetians.

The chief privileges which they solicited were:—

i. A perfect freedom of admission into every port belonging to the Soldan, protection while they continued in it and liberty of departure at what time they chose.

ii. Permission to have a consul with the same rights and jurisdiction as those of the Venetians.

iii. That they should not pay for goods imported or exported, higher duties than the Venetians.

[351]Crawfurd, *Researches*, II, p. 315.

The negotiations seem to have terminated with such success as to enable the Florentines to obtain some share in the Indian trade and soon after this period we find spices enumerated among the commodities imported by the Florentines into England.[352]

The advantages over the Eastern trade, thus secured to Florence and Venice, must have been considerably increased in 1453. That year marks the conquest of Constantinople by the Turks; this meant that Constantinople was no longer a mart for produce, nor was it open to the countries of the West; the Genoese were also expelled from Pera.

There are two points in commercial organization which may best be discussed along with commercial communities:—

Commercial organization.

i. The character of the merchant and the existence of an unwritten commercial code.

ii. The mechanism of business transactions.

The character of the merchant.

The first point which strikes us regarding the character of the merchant is the union of the functions of the trader and carrier. Merchants often had their own ships: 'The merchants (are) very rich, so much so that some will carry on their business in forty of their own ships.'[353] Some merchants of

[352] Robertson, *An Historical Disquisition*, p. 93.

[353] Conti, Major, *India*, p. 21; for other examples see Barbosa, op. cit., II, pp. 64, 82, 88, 126.

Calicut were so rich as to be owners of fifty ships.[353a] It was also not uncommon for the trader sometimes with his family to accompany the goods. Occasionally other objects, particularly that of pilgrimage, were coupled with trade: 'We found a great number of pilgrims...... Of these people some had come for the purpose of trade, (at Mecca)'.[354]

Business ability.

Regarding the question, how far was the merchant skilled in business, we can only say that contemporary writers were struck with the ability and shrewdness of the indigenous merchant. In Maabar, "Boys were trained to become keen and dexterous traders".[355] Two centuries later we are told: 'the more part or all of the Heathen merchants or Chatis who live throughout India are natives of this country (Charamandel, i.e., Cōḷamaṇḍalam), and are very cunning in every kind of traffic in goods'.[356] Nuniz[357] supports this: "they are honest men, given to merchandise, very acute and of much talent, very good at accounts". According to European standards of the period, therefore, the native merchants must be reckoned able business men.

Commercial integrity.

Commercial integrity is as necessary as shrewdness and business ability. Rogers was of opinion that the cultivation of commercial integrity with the acknowledgment

[353a] Kerr, *A General History*, II, p. 347.

[354] Varthema, *Travels*, pp. 37-38.

[355] Marco Polo, op. cit., II, p. 344.

[356] Barbosa, op. cit., II, pp. 125-26.

[357] Nuniz, Sewell, *A Forgotten Empire*, p. 390.

that a debt is a binding obligation were two of the most difficult and important lessons which civilised society teaches, and are far more difficult to learn than the control of passion and deference to custom.[358]

It is refreshing to read contemporary testimony to the character of the native merchant class. Al Idrīsī in the twelfth century says that the Indians are naturally inclined to justice and never depart from it in their actions. Their good faith, honesty and fidelity to their engagements are well known, and they are so famous for these qualities that people flock to their country from every side; hence the country is flourishing and their condition prosperous. Not merely was the nation considered very trustworthy in matters of trade; "whenever foreign merchants enter their port, three secretaries of the king immediately repair on board their vessels, write down their names and report them to him. The king thereupon grants them security for their property, which they may even leave in the open fields without any guard."[359] Among other instances of business honesty, we may cite the relations between the debtor and the creditor.[360] The story related about payment of debts does not seem to have been a mere legend: Polo witnessed an instance of this: "It was the king, who owed a foreign merchant a sum of money, and though the claim had been presented, he always put it off with

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[358] Rogers, *Six Centuries*, p. 141.

[359] Asher's Itinerary of R. Benjamin of Tud., p. 138, et. seq., quoted by Yule in Jordanus, *Wonders*, p. 22, n. 1.

[360] Al Idrīsī, Elliot, *History*, I, p. 88, and supra, p. 442.

promises. Now, one day when the king was riding through the city, the merchant found his opportunity, and drew a circle round both king and horse. The king, on seeing this, halted, and would ride no further; nor did he stir from the spot until the merchant was satisfied. And when the bystanders saw this they marvelled greatly, saying that the king was a most just king indeed, having thus submitted to justice''.[361] This is confirmed by the Chinese annals of the fourteenth and fifteenth centuries: 'In their customs, they are honest'; 'in their usages, they like sincerity'.[362] A gesture of cordiality was generally accorded to foreigners. ''If a foreign merchant who does not know the ways of the country applies to them and entrusts his goods to them, they will take charge of these, and sell them in the most loyal manner, seeking zealously the profit of the foreigner and asking no commission except what he pleases to bestow''.[363]

It is possible that some statements of this kind were exaggerations, and exceptions[364] there must have been; but the eulogy is so constant among mediaeval travellers that it must have had a solid foundation.[365]

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361 Marco Polo, *Travels*, II, p. 343.

362 *Hsing-ch'a shêng lan*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 449, *Ying yai shêng lan*, *T'oung Pao*, XVI, p. 457.

363 Marco Polo, *Travels*, II, p. 363.

364 For a singular instance of such an exception see Vasco Da Gama, *The Three Voyages*, p. 184.

365 Col. Yule, while agreeing with this view laments that 'after 150 years of European trade indeed we find a sad deterioration.' Yule, Marco Polo, *Travels*, II, p. 367 n.

Regarding the mechanism of business organization, the main points touched upon in contemporary accounts are 'buying in advance' the system of credit, the agency system, the method of valuing foreign commodities and the place of the broker, and the formalities connected with a business transaction.

Mechanism of business organization.

The practice of 'buying in advance' is referred to especially in regard to pepper and ginger: "They (*Vyābāris*) deal in goods of every kind both in the sea-ports and inland, wherever their trade is of most profit. They gather to themselves all the pepper and ginger from the Nayres and husbandmen and oftentimes they buy the new crops beforehand in exchange for cotton clothes and other goods which they keep at the seaports. Afterwards they sell them again and gain much money thereby."[366]

Buying in advance.

The practice of purchasing on credit is referred to by the same author in a letter written by him to Dom Manoel:[367] "This year we had at this factory for the cargoes of these ships four thousand quintals of ginger almost on credit which the king ordered to be given to us and we have gone on paying for it little by little." The agency system[368] has already been

Purchase on credit.

[366] Barbosa, op. cit., II, p. 56.

[367] ibid., I, p. xxxviii—xxxix.

[368] supra, p. 564.

referred to. With regard to the method of valuing foreign commodities we are told: On a commodity arriving from another country after calculating the charges which are incurred in carrying it from and back to the foreign country, as also the customs and other dues, and adding these to the original cost of the commodity, the price should be determined by the king which will be equitable to the buyer and the seller, so that a profit of ten per cent may be made.[369] This cannot be taken to represent anything more than a theoretical statement of what was considered just and reasonable for the time. Conditions varied in different parts. A glimpse into the practical working of the mode of doing business at Quilon as given by Mahuan[370] shows us that the agency used for valuation was the broker. He was apparently an important person: "When a ship arrives from China," says he, "the king's overseer with a Chitti go on board and make an invoice of the goods, and a day is settled for valuing the cargo". On the day appointed the silk goods, more especially the khinkis (kincobs), are first inspected and valued, which when decided on, all present join hands, whereupon the broker says, 'The price of your goods is now fixed, and cannot in any way be altered'.

Valuation of foreign commodities.

"The price to be paid for pearls and precious stones is arranged by the Weinaki broker, and the value of the Chinese goods taken in exchange for them is that previously fixed by the broker in the way above stated".

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[369] Vijñānēśvara, *The Mitākṣarā*, ii, 253.

[370] Mahuan, *Account*, *J.R.A.S.*, 1896, pp. 346-47.

"They have no abacus on which to make their calculations, but in its place they use their toes and fingers, and, what is very wonderful, they are never wrong in their reckonings".

Certain formalities of a business transaction.

A business transaction was apparently conducted with certain formalities. We are told, 'The merchants have this custom when they wish to sell or to purchase their merchandise', that is, wholesale :—They always sell by the hands of the *Cortor* or of the *Lella,* that is, of the broker. And when the purchaser and the seller wish to make an agreement, they all stand in a circle, and the Cortor takes a cloth and holds it there openly with one hand, and with the other hand he takes the right hand of the seller, that is, the two fingers next to the thumb, and then he covers with the said cloth his hand and that of the seller, and touching each other with these two fingers, they count from one ducat up to one hundred thousand secretly, without saying, "I will have so much" or "so much". But in merely touching the joints of the fingers they understand the price and say: "yes" or "No". And the Cortor answers "No" or "Yes". And when the Cortor has understood the will of the seller, he goes to the buyer with the said cloth, and takes his hand in the manner above mentioned, and by the said touching he tells him he wants so much. The buyer takes the finger of the Cortor, and by the said touching says to him: "I will give him so much ".[371] And in this manner they fix the price.

[371] Varthema, *Travels*, pp. 168-69.

The custom of 'giving betel' to the merchants terminated the transaction.[372] The mediaeval merchant also believed in certain signs and omens, and in effecting purchases and sales these had to be taken into account:

Signs and omens.

"Suppose that there is some purchase in hand, he who proposes to buy, when he gets up in the morning takes note of his own shadow in the sun, which he says ought to be on that day of such and such a length; and if his shadow be of the proper length for the day, he completes his purchase; if not, he will on no account do so, but wait till his shadow corresponds with that prescribed. For there is a length established for the shadow of every individual day of the week; and the merchant will complete no business unless he finds his shadow of the length set down for the particular day. (Also to each day in the week they assign one unlucky hour, which they term *Choiach.* For example, on Monday the hour of Half-tierce, on Tuesday that of Tierce, on Wednesday Nones and so on.)

"Again if one of them is in the house, and is meditating a purchase, should he see a tarantula (such as are very common in that country) on the wall, provided it advances from a quarter that he deems lucky, he will complete his purchase at once; but if it comes from a quarter that he considers unlucky, he will not do so on any inducement."[373]

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[372] Vasco Da Gama, *The Three Voyages*, pp. 346-47.

[373] Marco Polo, op. cit., II, p. 364.

(4) PORTS

Introductory—North of the Konkan—The Konkan coast—Ports between Goa and Delli—The Malabar ports—Mahuan's account of Cochin—Maabar—The Pāṇḍyan kingdom—Kāvēripaṭṭanam, Mailapur and Pulicate—Telingāna.

Introductory.

We next take up ports. The rise and fall of mediaeval ports forms an interesting chapter in the history of commerce of the period. The causes are connected in part with the rise and fall of particular commercial communities, or changes in the demand for commodities, the existence of natural advantages, such as the existence of a good harbour or convenient inland water communication or the rise and decay of Empires. It is obviously impossible to discuss these with regard to every port; we shall be following the more practical method of tracing the rise and fall of the major ports or the groups of ports in turn.

North of the Konkan.

The ports in the coast north of the Konkan-Broach, Rander and Surat—form our first main group. In the twelfth century Broach was a port for the vessels coming from China and also for those of Sind; its inhabitants were rich and engaged in trade and they freely entered upon speculations and distant expeditions.[374] Apparently it continued to be of some importance in the following centuries, as it is mentioned by Rashīdu-d Dīn about 1300, and by Friar Jordanus

[374] Al Idrīsī, Elliot, *History*, I, p. 87.

about 1330, and is mentioned[375] in the list of ports in the Catalan map of 1375.[376]

The gradual withdrawal of the Chinese from the Western waters reduced its importance in connexion with the Eastern trade.

Rander, known also as Reynel, was at that time of considerable importance. Like Broach earlier, its importance was due to its Chinese trade: "whoever would have at his disposal things from Malacca and China, let him go to this place, where he will find them in greater perfection than in any other place soever".[377] Many rich Moorish merchants resided therein and traded in their own ships with Malacca, Bengal, Pegu, Martaban and Sumatra.

Surat, below Rander, was just beginning to rise about the end of the fifteenth century when a rich Hindu trader, Gopi by name, is stated to have established himself on the spot and founded the town. Its rise, however, was rapid: "Hither sail in great numbers from Malabar and other parts, where they sell what they bring and take back what they want, as this is a great port for traffic, and there are here many substantial merchants."[378]

The next large group of ports was in the Konkan.

The Konkan coast.

The coast of Konkan suffered from one defect—the existence of organized

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[375] Rashīdu-d Dīn, Elliot, *History*, I, p. 49, Jordanus, Yule, *Cathay*, III, p. 76—Parocco.

[376] See map facsimile reproduced in Yule, *Cathay*, I, map facing page 300 and see p. 301.

[377] Barbosa, *An Account*, I, pp. 146-47.

[378] Barbosa, op. cit., I, pp. 148-49.

piracy; but this does not seem to have seriously interfered with its commercial development. An inscription of 1094 A.D. mentions Śristhānaka, Surpāraka, and Chemuli among the Konkan ports.[379] Other ports were Sabdan, Saimūr and Sindābūr and Tāna.

Sopara was a very ancient port mentioned by Ptolemy and Arrian. That it retained some of its seaborne commerce may be seen from its mention in the inscription of 1094 and by the Arab travellers of the twelfth century.[380]

In the beginning of the twelfth century, it was considered one of the entrepôts of India, with Sindān. From this time however, Sopara seems to have declined in importance; beyond a solitary mention by Jordanus in a letter[381] it finds no mention in the writings of later travellers.

The ports which played an important part in the period were Tāna, Chaul, Dabhol, and Goa. Tāna seems to have risen on the ashes of Kalyān in close vicinity to it. In the middle ages it is spoken of as a pretty seaport town and the capital of the Konkan.[382] It owed its rise partly to its excellent position. "The city is excellent in position."[383] An important article of export here was 'drugs', particularly *tabashir,* the roots of the *kāna* which 'were gathered in the neighbouring mountains and transported to the East and to

[379] *Ind. Ant.*, IX, p. 38.

[380] 976, Ibn Haukal, Elliot, *History*, I, p. 39.

[381] dated 1321 A.D., Jordanus, Yule, *Cathay*, III, p. 76.

[382] Alberuni, *India*, vol. i, p. 203; Al Idrīsī, Elliot, *History*, I, p. 89.

[383] 1320 A.D.—Odoric, Yule, *Cathay*, II, p. 114.

the West.' In the thirteenth century, it exported also leather of various excellent kinds and also good buckram and cotton. The major imports were metals, gold, silver and copper. Many ships and merchants frequented the place.[384] It continued to be important in the succeeding centuries, though later it was partly overshadowed by the rise of Chaul and Dabhol. It is significant that at the beginning of the sixteenth century, it does not have the prominence given to Chaul, Dabhol or Goa—it had only 'fair trade'—the evil effects of piracy partly contributing to its decline.

Chaul was an important seaport of the Tāna Silaharas who ruled in the Northern Konkan from 810 to 1260 A.D.[385] In the twelfth century, it was found to be a good port for export of aromatic plants specially *henna*.[386] Early in the fourteenth century, Chaul with the rest of the Konkan ports fell into the hands of the Mahomedans; in 1347 A.D., it formed part of the Bahmani kingdom. Firoz Shah Bahmani, who, in 1406 A.D. overran the Southern Mahratta country, is said to have despatched vessels every year from Goa and Chaul to procure manufactures and productions from all parts of the world and to bring to his court persons celebrated for their talents; its prosperity lay primarily in the fact that it was a market for horses. The supply of horses was a matter of the highest

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[384]Marco Polo, op. cit., II, p. 395.

[385]The Arab writers speak of it as Saimūr—For identification see Dames in Barbosa, *An Account*, I, p. 159; it is also sometimes referred to as Chemuli.

[386]Al Idrīsī, Elliot, *History*, I, p. 85.

importance to the kings of Dekhan and every endeavour was made by them to maintain the traffic in horse from the ports of the Red Sea and the Persian Gulf. Chaul was also famous for its manufacture of silk, fine muslin and calicos. The raw material for silk was obtained from China and was worked into the finest cloths in the Mahomedan settlement. In effect, Chaul kept up a considerable trade with Persia and the shores of the Red Sea; it had also considerable coasting trade with Malabar in wheat, grains, rice, millet and gingelly, so much so even in the months of December, January, February and March a great concourse of ships was found therein,[387] and at the season of sea traffic the city was like a fair.

Passing south, we come to Dabhol, with a good harbour. In 1470 A.D., it was an extensive seaport, where many horses were brought from Egypt,[388] Khorassan, Turkestan, Arabia, etc. It was reckoned the 'great meeting place for all nations living along the coast of India and of Ethiopia.' Like Chaul, it had facilities for inland water communication; particularly cotton goods from inland were carried down the river to Dabhol from where they were exported along with wheat, grain, chick peas, and pulse, and in return, were sent to other inland districts, copper, quicksilver and vermilion dye. On account of its extensive trade,

[387] Barbosa, *An Account*, I, pp. 159—60.

[388] Nikitin, Major, *India*, p. 20. The translation has Mysore. Yule and Burnell. *Hobson-Jobson*, s. v. Dabul rightly questions this. It seems to be *Misr*. (Egypt) as suggested by Sir J. Campbell in the *Bombay Gazetteer*, cited ibid.

great sums of money were collected at the custom house.[389]

Goa[390] known to the Arab writers as Sindābūr was a port of some importance even in the eleventh century. Ships of Oman are said to have been in its harbour in 1013 A.D., and from that time there has been continuous mention of the port and its trade.[391] By the beginning of the fifteenth century it had become a place of great trade. The land by reason that the harbour was exceedingly good had great trade, and many ships of the Moors came hither from Mecca, the city of Aden, Ormus, Cambaya and Malabar. Under the Portuguese it was a centre for import of horses; under the passport system adopted by them, the king of Portugal received a duty of 40 *cruzados* on each horse and on the whole collected a revenue of 40,000 ducats. The chief exports from Goa were rice, sugar, iron, pepper, ginger, and other spices and drugs.

Ports between Goa and Delli.

There were a large group of ports between Goa and Mt. Delli generally considered the beginning of 'Malabar country'. An enumeration is all that is possible

389 Barbosa, *An Account*, I, p. 165.

390 For its identification, see Yule and Burnell, *Hobson-Jobson*, s. v. Sindābūr, Yule, *Cathay*, IV, pp. 64-65, Dames in Barbosa, *An Account*, I, p. 170 n. But the mention of Kūwwai Sindābūr in the 24th Voyage, Sīdī Alī, *The Mohit*, *J.A.S.B.*, V, p. 654 should be considered conclusive.

391 1150 A.D. Al Idrīsī, Elliot, *History*, I, p. 87, 1300 A.D. Rashīdu-d Dīn, Elliot, *History*, I, p. 68, 1330 A.D. Ibn Batuta (Defrēmery), II, p. 177; see also Yule, *Cathay*, IV, pp. 64—66. Yule and Burnell, *Hobson-Jobson*, s. v. Sindābūr.

here: Beitkal, Ankola, Hanawar, Bathecala, Baindur, Barcelor, Bacanor, Mangalore, Manjeshwar, Kumbhla, Cangerecora, Nileswar. In general it may be said that they had a large coasting trade, specially with Malabar, and to a lesser extent the islands near the Coast. Rice was grown in the fertile valleys and much of this was carried by the Malabar zambucos for local consumption: "the Malabarees had no other food and albeit the country is but small, yet is it so full of people that it may well be called one town from Mount Dely even to Coulam." The rice carried was, in the main, black rice, very coarse, which was largely used by the poor people of Malabar. Part of the rice was also carried to the Maldive Islands from 'Cumbla' and coir (*cairo*) was got in exchange, the latter being a valuable article of trade at the time. Malabar also took rice, iron and sugar. In return, it supplied cocoanut oil, jaggery (palm sugar), palm wine, molasses, pepper and spices.

Three ports stand out above the rest, as having in addition, some trade with distant countries—Bathecala, Bacanor, and Mangalore. The Ormus ships brought to Bathecala horses and pearls and loaded on return voyage, white rice, black rice, myrobalan, powdered sugar, and cargoes of iron; the Portuguese control of Goa, later, led to its decline. Bacanor and Mangalore also sent rice to Ormus and Aden; we are told that the rice was taken after it had been husked and cleaned and packed in bales of its own straw.

The Malabar ports.

The coast from Mt. Delli to Coulam was studded with many ports, too numerous to describe.[392] The decay of these numerous ports, which then lined the coast, is indeed a very noticeable feature since the middle ages. Commerce was more diffused, not concentrated as at present, the concentration in some leading ports being no doubt helped by the development of railways. Each sent its little squadron of merchant vessels, the property of local owners and enjoyed a share of the sea-borne commerce, which is now concentrated in a few big ports. An analogy can well be drawn to the Cinque ports of mediaeval England and ports on the shores of the Firth of Forth, 'Once lined with sea-ports.'[393] It is not meant that all these little ports had good harbours; the shipping of the time was not such as to require deep water at the port: "The vessels were flat-bottomed, so as to draw little water, for there were many dry places (shoals)".[394] Many had no harbours worthy of the name. Marco Polo complains that the ships of Manzi and other countries that came hither in summer lay in their cargoes in 6 or 8 days and depart as fast as possible because there is no harbour other than the river-mouth, a mere roadstead and sand banks, so that it is perilous to tarry there.[395] Instead,

[392] A list of them may be appended. Paḻayangāḍī, Baliapatanam, Cannanore, Dharmapatanam, Tellicherry, Mahe, Chombal, Pudripatam, Tikodi, Pantalāyani, Kappata, Calicut, Beypore, Chaliani, Parappanangāḍi, Tanur, Ponnani, Veliyangode, Chetuvay, Kodungallūr, Ayakota, Cochin, Porakad, Kāyankolam, Quilon.

[393] See Yule, *Cathay*, IV, p. 27 n.

[394] Vasco Da Gama, *The First Voyage*, p. 129.

[395] Marco Polo, *Travels*, II, p. 386.

'one very extraordinary feature on the coast is the occurrence of mud-banks in from 1 to 6 fathoms of water, which have the effect of breaking both surf and swell to such an extent that ships can run into the patches of water so sheltered at the very height of the monsoon when the elements are raging and not only find a perfectly still sea, but are able to land their cargoes...... Possibly the snugness of some of the harbours frequented by the Chinese junks, such as Pandarani, may have been mostly due to banks of this kind.'[396] We have no space to describe each port or go into its history; a few salient features of the Malabar ports in general and some details about the more prominent ones are all that can be attempted here.

The first feature is the large part the Mahomedans played in the trade of Malabar—a point already dealt with. They were sufficiently strong to overcome the danger which the Malabar ports suffered in common—viz. piracy. We are told that from the kingdom of Malabar, there went forth every year more than a hundred corsair vessels on cruise. These pirates took with them their wives and children. "Their method is to join in fleets of 20 or 30 of these pirate vessels together, and then they form what they call a sea cordon, that is, they drop off till there is an interval of 5 or 6 miles between ship and ship, so that they cover something like an hundred miles of sea, and no merchant ship can escape them........ But now the merchants are aware of this and go well manned and

[396] Letter from Col. R. H. Sankey, C.B., R. E., dated Madras, 13th Feby., 1881, quoted in Yule and Burnell, *Hobson-Jobson*, s. v. Pandarāni.

armed and with such great ships that they don't fear the corsairs."[397]

The trade of the ports was directed towards four channels, the west, the east, coasting, particularly with the Konkan and Coromandel, and lastly with the islands. The goods exported were pepper, ginger, cinnamon, cardamon, myrobalans, tamarinds, precious stones of every kind, seed pearls, musk, ambergris, rhubarb, aloewood, cotton cloths and porcelain; many of these except pepper and some spices were not of local produce, but only re-exported. The imports were copper, quicksilver, vermilion, coral, saffron, coloured velvets, rosewater, knives, gold and silver. Generally ships started to the west in February and returned from the middle of August up to the middle of October, of the same year.

Of particular ports we shall deal with seven—Cannanore, Pantalāyani, Calicut, Cranganore, Cochin, Kāyankolam and Quilon.

Cannanore was one of the ports of disembarkation for horses from Persia. The customs duty for each horse towards the beginning of the sixteenth century was 25 ducats. They were taken mainly to Vijayanagar. There was much traffic in the place to which two hundred ships came every year from different countries.[398]

One interesting fact, which we owe to the observation of Varthema, is that in the port of Cannanore, elephants were employed to bring the ship on shore: "They beach ships the prow foremost, but here they put

[397] Marco Polo, *Travels*, II, p. 389.

[398] Varthema, *Travels*, pp. 124-25.

the side of the vessel foremost, and under the said ship they put three pieces of wood, and on the side next the sea I saw three elephants kneel down and with their heads push the ship on to dry land".[399]

Passing Cannanore, we may note one port Dharmapatanam, which was important as an exporting centre for grain and rice to Ceylon; in return were brought pearls:[400] "The pearls are brought here from the Tisan-chiang (Gulf of Manar—Ceylon) their place of production and when the pearl collectorate office gathers them all in and brings them over in small boats to this place (i.e. Jurfattan) where the rich (traders) use gold and silver to force down the prices? If a boat should come (from Tisan-chiang) to try to sell (directly) to the Chinese its profits will be insignificant indeed (i.e. Jurfattan pearl traders will undersell them)."

Pantalāyani[401] was a port of great reputation in the middle ages. In the twelfth century, its inhabi-

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[399] Varthema, *Travels*, p. 127.

[400] Al Idrīsī, Elliot, *History*, I, p. 90. 1349 A.D.—*Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 464-65.

[401] 1150 Fandarina, Al Idrīsī, Elliot, *History*, I, p. 90.

1296 Fantalaina, *Chinese Annals of the Mongol Dynasty*, quoted by Pauthier, Marc Pol, 532, and referred to in Yule and Burnell, *Hobson-Jobson*, s. v. Pandarāni.

1296 Pan-ki-ni-na, Chinese annals quoted by Rockhill, *Notes*, *T'oung Pao*, XV, 425 n. 2.

1296 Pantali, ibid.

1296 Fandaraina.

1300 Fandaraina, Rashīdu-d Dīn, Elliot, *History*, I, p. 68.

1321 Flandrina, Odoric, Yule, *Cathay*, II, p. 133.

1343 Fandaraina, Ibn Batuta, (Defrémery), IV, pp. 88 and 96.

1442 Bendinaneh, 'Abdu-r Razzāk, Major, *India*, p. 20.

1510 Pandarani, Varthema, *Travels*, pp. 132-33.

1516 Pandanare, Barbosa, *An Account*, II, p. 85.

[Yule and Burnell, *Hobson-Jobson*, gives Pandarani and quotes Barbosa, 152.] See also Yule and Burnell, *Hobson-Jobson*, s. v. Pandarāni.

tants were rich, "the markets well supplied and trade flourishing."[402] Its importance partly lay in the fact that it afforded safe anchorage for ships. Ibn Batuta distinctly notices that Pandarani afforded an exceptional shelter to shipping during the South West Monsoon,[403] and partly in the fact that it was one of the ports frequented by Chinese traders. This is alluded to in the *Yüan Shih*. In 1296, the exportation of gold and silver was forbidden and in the same year, the Government endeavoured to limit the trade with Mabar, Kulam, and Fandaraina to the small sum of 50,000 *ting* worth of paper money.[404] In Batuta[405] also alludes to the same. It appears, however, that by the time of Varthema it had declined in importance, for he says that the place was a wretched affair and had no port.[406]

Passing below Pantalāyani we come to Calicut. The rise and decline of Calicut is so intimately connected with the fortunes of particular commercial communities that more than a passing allusion is necessary to it. In the eleventh and twelfth centuries, Calicut and Quilon competed for pre-eminent position on the West Coast. The former was the centre of the Mahomedans, the latter of the Chinese.[407] The Chinese, however, also traded with Calicut: They drove a first

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[402] Al Idrīsī, Elliot, *History*, I, p. 90.

[403] Ibn Batuta (Defrēmery), IV, pp. 88 and 96. Vasco Da Gama, *The First Voyage*, pp. 48—50.

[404] Rockhill, *Notes*, *T'oung Pao*, XV, p. 425 and n. 1.

[405] Ibn Batuta (Defrēmery), IV, p. 88.

[406] Varthema, *Travels*, p. 133.

[407] Marco Polo, *Travels*, II, p. 376.

rate trade in the city of Calicut,[408] and even in Ibn Batuta's time, the people of China frequented it. But the king of Calicut having treated them badly they quitted it,[409] and later they concentrated all their efforts in Quilon itself, and with Quilon for their centre, they were able to concentrate their attention on the trade with the East, viz. Bengal and Moluccas, while the trade with the West Arabia, Egypt and Venice remained with Calicut.[410] But the struggle with the Mahomedans left the Chinese in the background; the success of the Mahomedans meant the prosperity of Calicut. But the turn of the Mahomedans came when the Portuguese in the beginning of the fifteenth century ousted them from their pre-eminent position and their decline meant the decline of Calicut too.

But in the days of its prosperity, it attracted to it a large part of the trade of the West Coast; its port was reckoned among the greatest in the world—on a par with Alexandria, and Zayton.[411] The people of China, of Java, of Ceylon, of Mahal (Maldives), of Yemen and of Fars frequented it, and the traders of different regions met there. A century later Nicolo

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[408]Joseph of Cranganore, in the *Novus Orbis*, quoted in Marco Polo, *Travels*, II, p. 391.

[409]ibid.

[410]Nagam Aiya, *Travancore*, I, p. 271.

[411]Ibn Batuta (Defrêmery), IV, p. 89; see also Yule, *Cathay*, IV, p. 2. Almost about the same time, the Chinese annals *Tao i chih lio*, (1349) says that Calicut (Kulifo) is the most important of all the maritime centres of trade. It is the principal port of the western ocean. At this time Calicut was apparently a port where horses were debarked, for the same annals say, 'They have fine horses which come from the extreme west, and which are brought here by the shipload.' Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 454-55.

Conti found it 'a noble emporium for all India, abounding in pepper, lac, ginger, a larger kind of cinnamon, myrobalans and zedoary'.[412]

In a similar strain wrote 'Abdu-r Razzāk who found Calicut a perfectly secure harbour which, like that of Ormus, brought together merchants from every city and from every country. The security and justice, which reigned in the city, attracted, according to him, merchants to the place for rich merchants brought to it "from maritime countries large cargoes of merchandise, which they disembark and deposit in the streets and market-places, and for a length of time leave it without consigning it to any one's charge, or placing it under a guard. The officers of the custom-house have it under their protection, and night and day keep guard round it. If it is sold, they take a custom duty of two and a half per cent., otherwise they offer no kind of interference. It is a practice at other ports, that if any vessel be consigned to any particular mart, and unfortunately by the decree of the Almighty it be driven to any other than that to which it is destined, under the plea that it is sent by the winds, the people plunder it; but at Kālīkot every vessel, wherever it comes from, and whichever way it arrives, is treated like any other, and no sort of trouble is experienced by it."[413] This fact

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[412] Conti, Major, *India*, p. 20. Mahuan also notices that it was a great emporium of trade frequented by merchants from all quarters (Mahuan, *Account*, *J.R.A.S.*, 1896, p. 345).

[413] 'Abdu-r Razzāk, Elliot, *History*, IV, pp. 98-99.

is attested to also by Ibn Batuta a century earlier. Says he, "In all the lands of Mulaybār, except in this one land alone, it is the custom that whenever a ship is wrecked all that is taken from it belongs to the treasury. At Cālicūt, however, it is retained by its owners and for that reason, Cālicūt has become a flourishing city and attracts large numbers of merchants".[414]

Nikitin in 1470 A.D. also describes it as a port for the whole Indian[415] sea, and its pre-eminence in the time of Vasco Da Gama is well attested to in the description of his voyages. The Moors had rendered it the centre of their trade, and the richest mart of all the Indies in which is to be found all the spices, drugs, nutmegs, and other things that can be desired, all kinds of precious stones, pearls, and seed pearls, musk, sanders, aguila, fine dishes of earthenware, lacker, gilded coffers, and all the fine things of China, gold, amber, wax, ivory, fine and coarse cotton goods, both white and dyed of many colours, much raw and twisted silk, stuffs of silk and gold, cloth of gold, cloth of tissue, grain, scarlets, silk carpets, copper, quicksilver, vermilion, alum, coral, rose-water and all kinds of conserves. Thus every kind of merchandise from all parts of the world is to be found in this place.[416]

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[414]Ibn Batuta (Broadway), p. 237.

[415]Nikitin, Major, *India*, p. 20.

[416] Kerr, *A General History*, II, pp. 346-47. It is said that every winter, there were at least six hundred ships in this harbour, and the shore is such that their ships can be easily drawn up for repairs. Kerr, op. cit., II, p. 347.

It has been remarked that many of these articles were only a re-export. In a letter from Libson,[417] the following are specified:—

Cinnamon	..	came from Ceylon 'and from no other place.'
Nutmeg	..	Malacca.
Castor	..	Pegu.
Fine pearls	..	Rameswaram.
Frankincense	..	Saboea (the coast of Habesh on the Red sea?)
Aloe wood, Rhubarb, Camphor, Calinga	..	China.
Myrrh	..	Fastica (Arabia).
Cardamon, Cloves	..	Cannanore.
Long pepper, Lac	..	Sumatra.
Benzoin	..	Zanzibar.
Brazilwood	..	Tannazar (Siam).
Opium	..	Aden.

Cranganore, Cochin and Kāyankolam form one group, being the centre of the Christian and Jewish merchants.

Cranganore, called Mūyirikkōḍu[417a] in an ancient copper-plate inscription earlier than 1500, was a port of great antiquity. The outlet of the great backwater was then, and till much later, at this point. The rise of

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[417] Kerr, op. cit., II, pp. 523-24.

[417a] *Ind. Ant.*, III, p. 334.

Cochin and the decline of Cranganore was due to the water of the lagoon finding its way into the sea near Cochin and the consequent drying up of the Cranganore channel from the beginning of the fourteenth century.[418] It had some importance when Marignolli wrote.[419] It had gone down considerably by the time of the arrival of the Portuguese, but still retained some importance and was an entrepôt of the pepper trade.[420] The ancient Christian population of the Syrian Church and an early Jewish settlement were its principal title to notice when Barbosa wrote.[421]

Cochin took the place of Cranganore about 1341 A.D. Cranganore had been the great emporium of trade for those parts till this date, when by one of those geological changes which have not been infrequent in the history of the western coast of India that vast body of water flowing down from the Western Ghats, which had formerly discharged itself at Cranganore, broke through the narrow sandy bank which separated it from the main sea and formed what is now called the Vypīn river.

Mahuan's account of Cochin.

By 1409 A.D. it had become a considerable port enjoying large trade with China, and Mahuan describes how when a ship arrived from China the king's overseer with a Chetti made an invoice of the goods and a

[418] *Imperial Gazetteer*, X, p. 354, ascribes this to 1341 A.D., when the Vypin harbour was formed. See also Whitehouse, *Cochin*, pp. 2-3.

[419] 1347, Marignolli, Yule, *Cathay*, III, p. 249—Cynkali.

[420] According to the Roterio, p. 108 quoted by Dames in Barbosa, *An Account*, II, pp. 88-89 n.

[421] Barbosa, *An Account*, II, pp. 88-89.

day was settled for valuing the cargo. Apparently there was a good demand for silk goods, for we are told that on the day appointed, the silk goods more especially the Khinkis (kincobs) were first inspected and valued.

The Cochin Rajahs had enjoyed the advantages of this outlet to the ocean for about a century and a half and had been greatly enriched by the commerce which their subjects carried on, chiefly with the merchants who were Nestorian Christians from N. W. India, Persia and other neighbouring countries. At the time of the arrival of the Portuguese, however, the trade of the port was in a very depressed state; for the more energetic and enterprising Zamorin had enticed away some of the merchants to Calicut, whilst his Mahomedan allies on the coast did their best to ruin the interests of the Christian traders.[422]

Kāyankolam is noted in the Chinese annals of the 14th century.[423]

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[422] Whitehouse, *Cochin*, pp. 2-3.

[423] *Tao i chih lio* (1349 A.D.): Kain Colan, *Ying yai shēng lan* (1425-1432 (?,)): Hsiao Ko-lan, *Hsing ch'a shēng lan* (1436 A.D.): Hsiao Ko-lan, Rockhill, *Notes, T'oung Pao*. XVI, pp. 445-48. The last calls it (a principal) port of all the lands of the western ocean; (ibid.) its real importance however, is indicated in the first: 'Sometimes through stress of weather (these Wu-tieh boats?) arrive late after the departure of the horse ships (from Kan-mai-li, the Comoro Islands) and without a full cargo; the wind blows (too) violently (for them to proceed), Other times the wind is contrary, and it (or they) cannot reach the sea of Lambri and escape the danger from the ragged rocks in (the bay of) Kao-lang-fu (Colombo), so they pass the winter in this place, remaining until the summer of the following year; when in the eighth or ninth moon ships come again (from Kan-mai-li?), then they go on (in their company so as to escape the pirates which infested the coast?) to Ku-li-fo (Calicut) to trade (*Tao i chih lio*, Rockhill, *Notes, T'oung Pao*, XVI, p. 446).

The *Hsing ch'a shêng lan* adds that they hold the markets in the middle of the day and that 'in their customs they are rather honest'. The combined testimony of all is to the effect that the native products were pepper (equal to that of Hili), dry betel nuts, *polomi* (jack-fruit) and coloured cotton and that the Chinese used in trading gold, iron, blue and white porcelain ware, cotton cloth, satins of various colours, iron ware, musk and black tassels.

Quilon was the last great port on the west coast. From early times it had some trade with south-western Asia, especially in pepper and brazil wood; but it found a serious rival in this branch of trade in Calicut. So it developed its eastern trade to such an extent that it became the emporium of the Chinese trade with the West. We learn[424] that Quilon served as a port of call where merchants coming from the country of the Ta-shï 'after travelling south to Quilon (Ku-lin) on small vessels transferred to big ships'; and conversely, we are told 'Chinese traders with big ships who wished to go to the country of the Arabs must tranship at Ku-lin to smaller boats before proceeding further'. In the twelfth century, a number of missions were interchanged between Quilon and China.[425] Quilon did not altogether lose her trade with the West, for from there ships sailed direct to Aden[426] and merchants from the Levant also made great profits there "by what they

[424]*Ling-wai-tai-ta* by Chōu K'ü-fei, quoted by Hirth and Rockhill, in Chau Ju-Kua, *Chu-fan-chi*, p. 24, p. 91 n. 17.

[425]Rockhill, *Notes*, *T'oung Pao*, XV, pp. 430 ff.

[426]Marco Polo, *Travels*, II, p. 376.

import and by what they export". The rise of Cochin in the fourteenth century must have diverted a part of its trade, but it continued to be visited by many great merchants, Moors, Heathens and Christians, who owned the ships in which they traded with Charamandel, the island of Ceylon, Bengal, Malacca, Sumatra, and Pegu.[427] Pepper had always been its staple product: Marignolli[428] thought the whole world's pepper was produced there; in addition, however, brazil called coilumin, good ginger and indigo were exported.

Maabar.

Passing beyond Cape Comorin, we come to the Maabar ports. It is necessary to remark that the Maabar coast did not suffer from the disadvantage which the West Coast, had, viz., the existence of organized piracy; at least we have no mention of it earlier than 1534, when piracy is reported near Negapatam.[429] The rulers of the East Coast also seem to have used all means in their power to encourage traders coming to their ports. The most notable instance is the charter of Mōṭupalli—'*abhayaśāsana*' granted by Gaṇapatidēva Mahārāja to the merchants trading on sea whose vessels used to call at or start from the seaport of Mōṭupalli. The necessity for the charter was that kings of old used to confiscate by force all the cargo, gold, elephants, horses, precious stones etc. of vessels *en route* from one country to another, which, being

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427 Barbosa, op. cit., II, p. 97.

428 Marignolli, Yule, *Cathay*, III, pp. 216-17.

429 *Correa*, iii, 554, quoted in Yule and Burnell, *Hobson-Jobson*, s. v. Negapatam.

driven by unfavourable winds, were stranded and wrecked in the sands. Under these charters traders were promised protection, and they were freed from all port dues except the authorised customs duties. The agency for the horses supplied to the Pāṇḍyan kings also enjoyed the patronage of the kings. Marco Polo distinctly tells us that the king extended great favour to merchants and foreigners "so that they are glad to visit his city".[430]

It seems, therefore, that merchants engaged in foreign trade received due encouragement at the hands of the monarchs in the East Coast. The first group of ports lay in the Pāṇḍyan kingdom, Kāyal, Vadalai, Marakāyarpaṭṭiṇam, Devipaṭṭiṇam, Toṇḍi and Pāśi-paṭṭiṇam. Their importance arose, in general, from their export of pearl and import of horses. Out of this group Kāyal was one of the ports visited by the Chinese in the early fifteenth century, this fact being alluded to in the *Ming shih*.[431]

The Pāṇḍyan kingdom.

At the beginning of the sixteenth century, it is referred to as a considerable seaport having rich Mahomedan merchants and was visited by many ships from Malabar, Coromandel and Bengal.[432] It is interesting to note that the fall of Kāyal was due to the same cause which had enabled it to rise, viz. the return of the sea: 'The people of Kāyal maintain that as the

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[430] Marco Polo, *Travels*, II, p. 371.

[431] Rockhill, *Notes*, *T'oung Pao*, XVI, p. 83: Kia-i-lê was visited by Chêng Ho in 1408 and again in 1412.

[432] Barbosa, op. cit., II, p. 123.

sea retired it [their city] became less and less suitable for trade, that Kāyal rose as Korkai fell, and that at length as the sea continued to retire, Kāyal also was abandoned.'[433]

But compared with the West Coast, the East Coast had not apparently as many harbours. Montecorvino's remark, 'the havens are few and bad' seems to apply particularly to the East Coast.[434]

Kāvēripaṭṭaṇam, Mailapur and Pulicate.

We pass over Toṇḍi, Pāśipaṭṭiṇam and Negapatam and notice Kāvēripaṭṭaṇam. This latter at the mouth of the Kāvēri had apparently retained its importance during the thirteenth century and from the Chinese annals[435] we also learn that Chinese junks used to touch at the port. According to Dr. Burnell, it seems to have finally ceased to be a place of importance in the fifteenth century partly owing to the silting up of the bed of the Kāvēri.[436]

Farther up in the north Mailāpur was a place where few traders went because there was very little merchandise to be had there, and besides, it was 'a place not very accessible,'[437] and by Barbosa's time it was almost deserted.[438]

[433]Letter from Dr. Caldwell, quoted by Yule, Marco Polo, op. cit., II, p. 373.

[434]John of Montecorvino, Yule, *Cathay*, III, p. 64.

[435]It is called 'Hsin-tsun' in the *Yüan shih*; a Chinese embassy was received here in 1281 A.D.—see Rockhill, *Notes*, *T'oung Pao*, XV, p. 432.

[436]cf. Yule, in Marco Polo, *Travels*, II, p. 335: "said to have been destroyed by an inundation about the year 1300." Burnell, *Charitrapura*, *Ind. Ānt.*, VII, p. 40, *The Antiquarian Remains*, I, p. 272.

[437]Marco Polo, op. cit., II, p. 353.

Ind. Ant., VII, p. 40, *The Antiquarian Remains*, I, p. 272.

[438]Barbosa, op. cit., II, p. 126.

Pulicate further up north, on the other hand, had a fair sea haven; and in the fifteenth century it carried on trade with Pegu, Malacca, and Sumatra in the east, and Malabar and Cambaya on the west.

From Malabar and Cambaya it received vermilion, dyes in grain required for its cotton cloth, rose-water, quicksilver and copper; while it imported rubies and spinels from Ceylon and Pegu and also musk from the latter, and passed these on to the Vijayanagar kingdom. It sent in exchange to the east its own printed cotton cloths manufactured locally.[439]

The two last ports we would like to notice are Mōṭupalli and Masulipatam, both in the kingdom of Telingāna. We have already referred to the charters of protection granted to merchants at the port which made the port a welcome place for trade. The chief articles of local production were diamonds and "the best and most delicate buckrams and those of highest price". The best of the diamonds, and other large gems as well as the largest pearls were all carried to the Great Kaan and other kings and princes of those regions, while 'those that are brought to our part of the world are only the refuse, as it were of the finer and larger stones'.[440] The inscription[441] referred to gives a long list of articles, apparently all imports sandalwood, camphor (Chinese), pearls, rose-water, ivory, civet, camphor oil, copper,

Telingāna.

[439]See Barbosa, op. cit., II, pp. 129-32. Varthema, *Travels*, pp. 194-95.

[440]Marco Polo, op. cit., II, p. 361.

[441]supra, p. 565.

zinc, resin, lead, silk thread, corals, perfumes, pepper, and arecanuts.

(5) SHIPPING

Introductory—Kinds of ships: indigenous—The build of the ships—The Chinese ships—The size of ships—Centres of ship-building—The Chinese ships—Where Chinese ships were built—The spacing of goods.

Introductory.

An account of shipping comprises within its scope the different kinds of ships which entered or left the South Indian ports, the mode of their construction, their size and carrying capacity, the method of storage for different classes of goods or shipment, and the places of ship-building. We might also include, if it were possible, an account of the number of ships which left the ports annually as an indication of the volume of the export and import trade of the country.

Kinds of ships: indigenous.

The kinds of ships that entered or left the South Indian ports may be classified under indigenous and foreign. Of kinds of indigenous ships we have mention[442] of the following:—

1. *almadia*—a canoe, or dug-out, a boat made of one entire piece of timber, a ferry boat.

[442]See Jordanus, *Wonders*, pp. 53—55, John of Montecorvino, Yule, *Cathay*, III, pp. 66-67, Marco Polo, op. cit., I, p. 108, and Yule, ibid., p. 117, Yule, *Cathay*, II, p. 113, Barbosa, op. cit., I, pp. 14, 97, 132, 159, 177, 197, II, pp. 96, 121, 236, Varthema, *Travels*, pp. 154, 269, 270, 275, 280, Vasco Da Gama, *The First Voyage*, p. 66, Vasco Da Gama, *The Three Voyages*, pp. 239—42, Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chi*, p. 30.

2. *atalaya*—a rowing galley: 'shore boat often used for patrolling'. Coast-guard, watch-boat.

3. *bargatim*—a light rowing boat, drawing little water and suitable for coast-work.

4. *capel.*

5. *chaturi*—a light rowing boat: 'a vessel which goes with a sail and ears......made of one piece, of the length of twelve or thirteen paces each. The opening is so narrow that one man cannot sit by the side of the other......sharp at both ends.'

6. *champane*—a small boat now known as *sampan.*

7. *fusta*—used to make longer voyages.

8. *jase.*

9. *kiatu*—built like grain measures.

10. *parao*—a rowing vessel: 'boat of ten paces each, and all of one piece, and goes with oars made of cane, and the mast also is made of cane'.

11. *puni*—catamaran.

12. *sanguical*—called so from being built at Cinguicar.

13. *terada*—shoreboat.

14. *zambuquo*—large sea-going craft, very much used in trade.

Of the foreign kind, the Chinese were by far the most important. They were of three kinds, the junk, the zao and the kakam, classified according to their size.

The build of the indigenous ships has been described by various travellers in the middle ages[443]—the Arab travellers of the ninth and tenth centuries, Chau Ju-Kua in the twelfth, Montecorvino and Marco Polo in the thirteenth, Odoric and Ibn Batuta in the fourteenth, Vasco Da Gama and Stefano in the fifteenth and Varthema and Barbosa in the beginning of the sixteenth century.

The build of the ships.

In the middle ages, the boat propelled by oars was the rule. The construction we must picture as very clumsy; we find mention of the cords with which the plank boats had to be held together or they would break apart. We learn that the ships were not so large but that they could be pulled up on the beach when a landing was made each evening.

The description given in a letter written about 1292 A.D. by John of Montecorvino may be taken as a starting point:—

"Their ships in these parts are mighty frail and uncouth with no iron in them and no caulking. They are sewn like clothes with twine. And so if the twine breaks anywhere, there is a breach indeed! once every year, therefore, there is a mending of this, more or less if they propose to go to sea. And they have a frail and

[443]Abū Zaid, Renaudot, *Ancient Accounts*, p. 60, Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, pp. 30-35, John of Montecorvino, Yule, *Cathay*, III, pp. 66-67, Marco Polo, *Travels*, I, p. 108, Odoric, Yule, *Cathay*, II, p. 113, Jordanus, *Wonders*, pp. 53—55, Vasco Da Gama, *The First Voyage*, p. 26, Kerr, *A General History*, II, p. 347, Stefano, Major, *India*, p. 3, Varthema, *Travels*, pp. 152—54, Barbosa, *An Account*, II, pp. 76, 107-08, Vasco Da Gama, *The Three Voyages*, pp. 238—42.

flimsy rudder, like the top of a table, of a cubit in width, in the middle of the stern, and when they have to tack, it is done with a vast deal of trouble, and if it is blowing in any way hard, they cannot tack at all. They have but one sail and one mast and the sails are either of matting or of some miserable cloth. The ropes are of husk".[444]

The absence of iron in Indian shipbuilding is a matter of comment by many. It was disposed of by one with the simple remark: 'they have no iron to make nails of'.[445] The myth of magnetic mountains was another explanation. Thus: "Some of these vessels are without any nails or iron for they have to pass over the loadstone."[446] It was believed that the magnet pulled out the iron bolts and nails of passing ships which then fell to pieces and were lost; at any rate, the practice of sewing the planks together was all but universal.[447] The twine used in stitching was made from the husks of the cocoanut: "They beat this husk until it becomes like horse hair and from that they spin twine and with this stitch the planks of the ships together. The twine is useful as it keeps well and is not corroded by the sea-water". Also the pliancy of a stitched boat was useful in a surf as in the Malabar and Coromandel Coasts,[448] but it was not fit to stand well in

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[444]John of Montecorvino, Yule, *Cathay*, III, pp. 66-67.

[445]Marco Polo, *Travels*, I, p. 108.

[446]Vasco Da Gama, *The First Voyage*, p. 129, and n. 3.

[447]See for exceptions Vasco Da Gama, *The Three Voyages*, pp. 240-41.

[448]Sir B. Frere, in a letter quoted by Yule, in Marco Polo, *Travels*, I, p. 117.

a storm—though it was considered better than hemp. Such ships which were sewn with coir had keels, while those fastened with nails had not, but were flat-bottomed.[449]

Sails were made of rush mats,[450] or of cloth.

The ships were not pitched but were rubbed with fish oil. The old Arab voyagers of the 9th century describe the fishermen of Siraf in the Gulf as cutting up the whale bladder and drawing the oil from it which was mixed with other stuff and used to rub the joints of ships' planking. The sails and anchors of the ships have been described thus:[451] in these ships they have not got pumps, only some buckets of thick leather, tanned in such a way that they last very long; they throw out all the water by hand labour: they call these buckets *baldes*. Their yards have two-thirds of their length abaft and one-third before the mast, and the sail is longer abaft than forward by one-third; they have only a single sheet (escota), and the tack of the sail at the bow is made fast to the end of a spirit almost as large as the mast, with which they bring the sail very forward, so that they steer very close to the wind, and set the sails very flat.......... Their anchors are of hard wood, and they fasten stones to the shanks so that they are heavy and go to the bottom; they have also got other anchors of stone and iron which have wooden arms, and which also hold well.

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[449]Vasco Da Gama, *The Three Voyages*, p. 241. Barbosa, *An Account*, II, p. 76.

[450]Stefano, Major, *India*, p. 3.

[451]Vasco Da Gama, *The Three Voyages*, pp. 240-41.

The build of Chinese junks was distinct from that of the other ships, which used to frequent the south Indian ports. They were built at Zayton and at Sinkalan or Sin-ul-Sin (i.e. Canton). Ibn Batuta thus describes their build:[452] "This is the way they are built. They construct two walls of timber which they connect by very thick slabs of wood clenching all fast this way and that with huge spikes, each of which is three cubits in length. When the two walls have been united by these slabs they apply the bottom planking and then launch the hull before completing the construction. The timbers projecting from the sides towards the water serve the crew for going down to wash and for other needs. And to these projecting timbers are attached the oars, which are like masts in size and need from 10 to 15 men to ply each of them. There are about 20 of these great oars and the rowers at each oar stand in two ranks facing one another. The oars are provided with two strong cords or cables".

The Chinese ships.

The ships were of fir timber. As Friar Jordanus noted,[453] they were very bulky, being made of three thicknesses of plank, 'so that the first thickness is as in our great ships, the second cross-wise, the third again long-wise'; Nicolo Conti suggests[453a] the reason for this: 'the lower part is constructed with triple planking in

[452] Ibn Batuta (Defrēmery), IV, pp. 91 ff.

[453] Jordanus, *Wonders*, p. 55.

[453a] Conti, Major, *India*, p. 27.

order to withstand the force of the tempests to which they are exposed'.

Some ships, however, had at the time of construction double planks;[454] but "when the ship had been a year at sea, and they wished to repair her, they nailed on a third plank over the first two and caulked it well; and when another repair was wanted, they nailed on yet another plank and so on year by year as it was required." "Howbeit, they do this only for a certain number of years and till there are six thicknesses of planking," [455] for, "when the ship has come to have six planks on her sides, one over the other, they take her no more on the high seas, but make use of her for coasting as long as she will last and then they break her up".[456] The fastenings were all of good iron nails,—a contrast to the ships of the Moors, which were met with in the Indian Ocean.[457] The planks were not pitched, for "these people do not have any pitch but they daub the sides with another matter, deemed by them far better than pitch; it is this. You see they take some lime and some chopped hemp, and these they knead together with a certain wood-oil, and when the three are thoroughly amalgamated, they hold like any glue. And with this mixture, they do paint their ships." [458]

Another important feature noticeable in the construction of Chinese ships was the system of water tight

[454]Marco Polo, *Travels*, II, p. 250; Ibn Batuta, quoted above.

[455]Marco Polo, *Travels*, II, p. 251.

[456]ibid., see also Barbosa, *An Account*, II, pp. 173-74.

[457]Marco Polo, *Travels*, II, p. 250.

[458]ibid.

compartments. Marco Polo thus describes it: "The larger of their vessels have some thirteen compartments or severances in the interior, made with planking strongly framed, in case mayhap the ship should spring a leak, either by running on a rock or by the blow of a hungry whale (as shall betide ofttimes, for when the ship in her course by night sends a ripple back alongside of the whale, the creature seeing the form fancies there is something to eat afloat, and makes a rush forward, whereby it often shall stave in some part of the ship.) In such case, the water that enters the leak flows to the bilge, which is always kept clear; and the mariners having ascertained where the damage is, empty the cargo from that compartment into those adjoining, for the planking is so well fitted that the water cannot pass from one compartment to another. They then stop the leak and replace the lading."[459] Nicolo Conti, with his usual brevity, puts the whole thing well by saying,[460] "Some ships are built in compartments, that, should one part be shattered, the other portion remaining entire may accomplish the voyage".

The size of ships.

Regarding the size of ships we may say that ships of Indian build were comparatively much smaller.[461] According to Barbosa, the Moors 'in the days of their prosperity in trade built keeled ships of a thousand and a

[459] Marco Polo, *Travels*, II, p. 249-50.

[460] Conti, Major, *India*, p. 27, Marco Polo, *Travels*, II, p. 252.

[461] The evidence brought together under this head by *Mookerji*, [*Indian Shipping*, pp. 191-92] seems to show that the *Indian* ships were much larger than what they were; in reality, that evidence applies to *Chinese ships in Indian waters* and not Indian ships [infra, p. 622 and n. 473].

thousand two hundred *bahares* burden' which would make 224 tons. Some Moorish ships were, however, larger having a carrying capacity of 800 tons.[462] Regarding the size of small ships, we are told,[463] some *paraos* were boats of ten paces each and were all of one piece; the *almadia* also was of one piece, and the *caturi* was of the length of 12 or 13 paces each, the opening of which was so narrow that one man could not sit by the side of another. The accounts noted above—of one mast, one sail, one rudder and no deck—also point to the small size of vessels. I believe we shall be right in accepting Varthema's statement, viz., at Calicut they make their vessels each of 300 or 400 butts[464] i.e. 200 tons as a statement of average conditions obtaining then, regarding merchant ships.

Centres of shipbuilding:

The centres of ship-building were Calicut, Cochin, Chinguicar, and the Maldive Islands.

The Chinese ships.

The evidence regarding the size of Chinese ships is more voluminous, consisting of Chinese evidence as well as the evidence of foreign writers who had opportunities to observe them in South Indian ports and have left notes.

An analysis of the evidence[465] suggests that estimates of size were made on the basis of the number of masts, sails, decks, and cabins the ships had, besides the number of mariners each could carry. On the

[462] Vasco Da Gama, *The First Voyage*, p. 128.

[463] Varthema, *Travels*, p. 154.

[464] ibid.

[465] Marco Polo, *Travels*, II, pp. 249-51, Jordanus, *Wonders*, p. 55, Ibn Batuta (Defrémery), IV, pp. 91 ff.

average the Chinese junks had four masts, though sometimes they had two additional masts "which they ship and unship at pleasure". Regarding the number of sails, the maximum seems to have been twelve: 'one of these great junks carries from three sails to twelve.'

As to decks, Marco Polo found they had but one deck;[466] while Ibn Batuta observed that on each ship four decks were constructed. It is possible that in Ibn Batuta's time comparatively bigger ships were constructed. Even Polo alludes to the fact that 'they used formerly to be larger than they are now' and the ships with four decks to which Ibn Batuta refers may have been a revival of the old type of ships.

The impression regarding the size is only confirmed by the study of the number of cabins, and the number of crew in each ship. Marco Polo speaks of 200 (or some of them 300) mariners—a large crew indeed for a merchant vessel, and adds that each vessel contained 50 or 60 cabins, wherein the merchants abide greatly at their ease, every man having one to himself. But larger figures are given by later travellers. Odoric says that the ship in which he went from India to China had 700 souls on board, a statement which very closely agrees with Chinese evidence. Jordanus says the ships had a hundred cabins.[467]

Ibn Batuta's figures regarding mariners are still larger. Each ship has a crew of 1000 men, viz., 600 mariners and 400 soldiers among whom are archers,

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[466] *Travels*, II, p. 249.

[467] Jordanus, *Wonders*, p. 55.

target men and cross men to shoot naphtha.... There are cabins and public rooms for the merchants; some of these cabins are provided with closets and other conveniences and they have keys so that their tenants can lock them and carry with them their wives or concubines. The crew in some of the cabins have their children and they sow kitchen herbs, ginger, etc. in wooden buckets.[468]

To add to this the make of the ship added to its huge size. Friar Jordanus was astonished:[469] "The vessels which they navigate in Cathay be very big, and have upon the ships' hull more than C (one hundred) cabins, and with a fair wind they carry X (ten) sails, and they are very bulky, being made of three thicknesses of plank, so that the first thickness is as in our great ships, the second cross-wise, the third again long-wise. In sooth, 'tis a very strong affair!"

The carrying capacity of the ships was estimated by Nicolo Conti at 2000 butts.[470] Marco Polo adopts a different criterion, to estimate the carrying capacity of the Chinese junks; according to him one ship could carry 5000 or 6000 baskets of pepper, (and they used formerly to be larger than they were in his days). It

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[468] Ibn Batuta (Defrēmery), IV, pp. 91 ff.

[469] Jordanus, *Wonders*, p. 55.

[470] It may be noted in passing that Nicolo Conti's description refers to a ship having 5 masts and 5 sails. A tun of wine consists of two butts, according to Oppenheim [*History of the Administration of the Navy*, London, 1896], was equivalent to 60 cubic feet, adding the size of the casks and the loss of space due to their irregular shape—Moreland, *India*, p. 310. 2000 butts would therefore be equivalent to 60000 cubic feet.

would be interesting to know the space occupied by a basket of pepper but we have no information.

In thus estimating the size of the Chinese junk we have hitherto left out of account what may be called its appurtenances which actually made the junk look larger. Marco Polo and Ibn Batuta again give us full details:—[471]

"Every great ship has certain large barks or tenders attached to it; these are large enough to carry 1000 baskets of pepper, and carry 50 baskets of pepper and carry 50 or 60 mariners apiece (some of them 80 or 100) ......Each ship has two [or three] of these barks, but one is bigger than the others."

Ibn Batuta says with more definiteness that each vessel is accompanied by 3 others,[472] which were called respectively 'The Half', 'The Third' and 'The Quarter', their purpose being to tow the junk in calm weather or in calm seas.

There were also some ten (small) boats for the service of each great ship, to lay out the anchors, catch fish, bring supplies aboard and the like. When the ship was under sail she carried these boats slung to her sides. And "the large tenders have their boats in like manner".[473] Before we leave the subject of size, it is

[471] Marco Polo, *Travels*, II, pp. 250-51.

[472] Ibn Batuta (*Broadway Travellers*), p. 278.

[473] We may point out that Mookerji has attributed these characteristics to *Indian* ships. He says 'Marco Polo has also left some very important and interesting details regarding *Indian* ships' (*Indian Shipping*, p. 191; italics are mine). Again, 'Besides the construction of *Indian* ships, Marco Polo gives details regarding their size form and fittings and their mode of repairing' (*Indian Shipping*, pp. 192-93). The passages in Marco Polo (*Travels*, Bk. III, Ch. i, pp. 249-51) describe *Chinese* ships, the merchant ships of Manzi which only *visited* Indian ports, and do not apply to Indian ships which are described later.

worth while remarking that contemporary thought tried to justify such large size:—[474]

"Traders say that it is only when the vessel is large and the number of men considerable that they dare put to sea, for overseas there are numerous robbers, and they plunder, moreover, those who are not bound for their (the robbers') country..............".

Again, "In foreign lands, though there may be no tax on commerce, there is an insatiable demand for presents . No matter whether the cargo is large or small, the same demands are made; and consequently small ships are not profitable."[475]

Besides these large junks, as they were called, the Chinese built also two other kinds of ships, smaller in size, the *Zaon* (the middling) and the *Cacam* (small).[476]

Where Chinese ships were built.

The centres of ship building for Chinese ships were Canton and Zayton.

An account of the actual spacing of goods conveyed in a ship can be gathered from *The Three Voyages of Vasco Da Gama.* Pepper, ginger and cinnamon were carried. "The Mozambique pilot who was in the ship arranged the compartments with the rafter and planks, all which were made very strong and pitched over, which was done by the ship's workmen; and they were lined

The spacing of goods.

[474] *P'ing-chōu-'k'o-t'an,* in Chau Ju-Kua, *Chu-fan-chï,* p. 31.

[475] Ibid.

[476] Ibn Batuta (Defrêmery), IV, p, 91:. Il y en a trois espèces: 1° les grands, qui sout appelés *gonoûk* et an singulier *gonk* "jouque (du chinois *tchoucn*);" 2° les moyens, nommés *Zaou* (*sao* ou *seou*), et 3° les petits nommés *Cacam* (*hoa-hang*).

with matting, of which there was plenty on shore, made for this purpose of stowing cargo in ships. The pilot told the captain-major that each kind of goods was to go by itself separated from the rest, because that which went mixed was spoiled, the one kind by another; and it was thus executed, as the pilot directed". Of the three, the factor said that they would take the cinnamon last, because as it was a bulky article of little weight, it must lie on the top of the cargo.[477] Pepper was considered useful in spacing as it was necessary to stow it below the other merchandise.

A picture of the inside of a ship where goods were stored is presented to us in the pages of Vasco Da Gama : " Inside, instead of decks, they have chambers and compartments made for the merchandise, covered with leaves, the leaves of the palm tree dried and well woven together; they form a sort of shelving roof from which the rain water runs to the side of the ship and goes below to the pump without touching the goods which are carried very well lodged and stowed in their compartments and above this covering of palm leaves they place cane mats spread over it and walk upon them without doing harm to the chambers beneath."

In the ships coming from the west, horses invariably formed one item of the shipment in addition to other cargo. As the ships had no deck, Marco Polo tells us,[478] a cover was spread over the cargo when loaded. "This cover consists of hides and on the top

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[477] Vasco Da Gama, *The Three Voyages*, pp. 184-85.

[478] Marco Polo, *Travels*, I, p. 108, II, p. 395.

of these hides, they put the horses which they take to India for sale......".

One point of interest regarding spacing of goods is noted by the Chinese annals written about 1122: "The traders divide the space by lot among themselves and store their goods therein. Each man gets several feet (of space for storing his goods) and at night he sleeps on top of them."[479]

(6) NAVIGATION

1. Introductory:. scope of the section—Sources—2. Trade routes: the Persian Gulf route—The Red Sea Route—Difficulties of the Red Sea navigation--The relative importance of the two routes—Routes to the East—3. Risks of navigation—(a) Due to the nature of the sea—Rough sea—Calm sea—Shoals—Invisible rocks—Strong currents; dangerous fish, men, snakes and liver-eaters—(b) Pirates—Their method of attack—Encouraged by kings—Complaints regarding pirates—'Track off'—(c) The time for navigation—The East—The West—The monsoons of separate ports—4. Equipment: mast, sail, rudder, anchor—Nautical instruments—Quadrants—The mariners' compass—Charts—Slowness of navigation.—5 Some habits of seamen: superstition and reverence for saints—Discipline—Efficiency of the mariners.

1. Introductory: scope of the section.

In this section, we take up first a study of the particular routes followed by sailors in the period under consideration. This aspect of the subject is of some importance, for, though we may agree with Robertson when he says, "When any branch of commerce has got into a certain channel, although it may be neither the most proper nor the most

[479] *P'ing-chōu-k'o-t'un* quoted by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, p. 31.

commodious one, it requires a long time, and considerable efforts, to give it a different direction",[480] it still remains true that competing routes may have varying degrees of importance at different periods due to local and temporary causes. The risks of navigation in the middle ages as noted by contemporary writers, the time and season for sailing as determined by the course of the monsoons, the mode of navigation, and the instruments in use at the period, and finally some habits of seamen, as handed down to us in the recorded voyages of the period will be studied before we conclude this history of commerce in the middle ages.

Sources.

Besides the contemporary sources mentioned in section (1), we have a work on navigation, the *Mohit*, that is, the ocean, written by Sīdī Alī in December 1554.[481] Though a somewhat later work, it is useful for a study of our period as it was compiled out of no less than ten Arabic works on the geography and navigation of India, three ancient, and seven comparatively modern ones, five of the latter being composed about 1511 by Suleiman Ben Ahmed, a native of the town of Sheher, viz. the *Fewaīd*, the *Hauwīe*, the *Tohfetelfohūl*, the *Omdet*, the *Minhāj*, and another, the *Kilādet-ul-shomūs*.[482] It tells us the theory and practice of navigation in the Indian seas in the middle ages, and, when supplemented by the statements of contemporary travellers, enables us to give a fairly complete picture of this aspect of commerce.

[480] Robertson, *An Historical Disquisition*, p. 32.

[481] Sīdī Alī, *The Mohit*, *J.A.S.B.*, III, pp. 545 ff., V, pp. 441 ff.

[482] See Von Hammer in Sīdī Alī, *The Mohit*, *J.A.S.B.*, III, p. 546; for the date, ibid.

The main routes serving as the paths of trade between Southern India and the West during the middle ages were two: the Persian Gulf route, and the Red Sea route. Merchandise was carried in ships from the Western ports to the straits of Ormus and the rivers Euphrates and Tigris and were unladen at the city of Basra, from whence they were carried overland to Aleppo, Damascus, and then the Venetian galleys came and received the goods. The southern route, reaching Europe through Egypt, was mainly maritime. It had to contend with two great difficulties, the difficulty of navigation in the Red Sea, and the exactions of the Sultan of Egypt. The navigation of the Red Sea had in ancient times been considered by the nations around it to be so extremely perilous that it led them to give such names to several of its promontories, bays and harbours as convey a striking idea of the impression which the dread of this danger had made upon their imagination. The entry into the Gulf they called *Babelmandeb,* the Gate or Port of Affliction. To a harbour not far distant they gave the name of *Mete,* i.e., Death. A headland adjacent they called *Gardefan,*[483] the Cape of Burial. No sailing was done on this sea at night because of the number of rocks in it, at the water's edge.[484] Varthema explains the reason clearly: "The reason why it is not possible to sail

2. Trade routes: the Persian Gulf route.

The Red Sea route.

Difficulties of the Red Sea navigation.

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[483] Robertson, *An Historical Disquisition,* p. 228.

[484] Abū Zaid, Renaudot, *Ancient Accounts,* p. 93, Ibn Batuta (*Broadway Travellers*), p. 107.

during night is, that there are many islands and many rocks, and it is necessary that a man should always be stationed on the top of the mast in order to see the route, which cannot be done during the night-time, and therefore they can only navigate during the day".[485] The peril was so great at least from Judda, that the drugs and spices had to be transhipped to smaller vessels for Suez.[486] This sea, moreover, was subject to very thick fogs and to violent gales of wind, and so had nothing to recommend it either within or without;[487] indeed, Nicolo spent two months to cross the Red Sea on account of the difficulty of navigation.[488]

These difficulties also led to certain changes, in the course of centuries, in the ports on the Red Sea, from where goods were carried by caravan to Cairo and Alexandria. From early times, the staple of the trade had been removed from the northern extremity of the sea to Berenice as by this change a dangerous navigation was greatly shortened; later Cossier was tried,[489] goods being carried from this place to *Cous* on the Nile, and thence to Cairo; later still *Kene* lower down the river took the place of *Cous*.[490] Towards the end of the fifteenth century, however, goods imported were carried from Judda in very small craft to Suez, then

[485]Varthema, *Travels*, p. 54.

[486]Judeã (Jidda), Vasco Da Gama, *The First Voyage*, pp. 77-78, Barbosa, *An Account*, I, pp. 43, 47.

[487]Abū Zaid, Renaudot, *Ancient Accounts*, p. 93.

[488]Conti, Major, *India*, p. 21.

[489]Abulfeda, Descript. Egypt. edit. Michaelis, p. 77, cited in Robertson, *An Historical Disquisition*, p. 228.

[490]Vasco Da Gama, *The First Voyage*, pp. 77 ff. Barbosa, *An Account*, I, pp. 43, 47.

loaded on camels and carried by land to Cairo; at Cairo, whence the spices were embarked on the river Nile to a place called Roxette (Rosetta). Here, they were again placed on camels to be taken to Alexandria where they were sold to the Venetian merchants. The difficulties of the Red Sea navigation were apparently so great that a section at least of the trade that passed through the southern route avoided it altogether, the traders preferring to cross the desert by a nine days' journey to Chus on the Nile, from thence to Cairo and to Alexandria. This is the impression we get from Marino Sanudo,[491] a Venetian nobleman, who gives an account of the trade as carried on by his countrymen about the beginning of the fourteenth century. But this too had its difficulties. From Aden this route went through the Sultan of Egypt's dominions and we are informed that a toll of thirty-three per cent was levied on all the goods which went this way. Hence the writer concludes although the cost of package and land carriage across the old route (the Ormus route) were large, the tolls were less burdensome. The spices, too, which passed through Egypt were damaged and adulterated, so that the rarer commodities such as cloves, nutmegs, mace, gems and pearls were still conveyed up the Persian Gulf but all the more bulky goods such as pepper, ginger, cinnamon together with a portion of the more valuable articles were now conveyed by the southern route.[492]

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[491] Mar. Sanuti Secreta Fidelium Crucis, p. 22 etc., summary given in Birdwood, *Report*, Robertson, *An Historical Disquisition*, pp. 93 94, Rogers, *Six centuries*, p. 155.

[492] Birdwood, op. cit., pp. 130-31.

Thus there were two main routes for the carriage of goods from the western ports to Europe. The greater or the lesser importance of the two routes in the middle ages is so closely related to the events which happened in Europe, Egypt and Western Asia that a clear understanding of these is necessary to follow the details:—[493]

The relative importance of the two routes.

X c. A.D.—Red Sea route re-opened.

1187 A.D.—Acre, the principal emporium.

1204 A.D.—Capture of Constantinople by the Crusaders with the help of the Venetians. Venice gets access to the overland route.

1260—The facilities afforded by the Mongol emperors who now held the whole tract from the Persian Gulf to the shores of the Caspian gave an advantage to the Persian Gulf Route.

1261—Subversion of the dominion of the Latins in Constantinople with the aid of the

[493]Major, *India*, p. xvi.

Oaten, *European Travellers*, p. 15.

Macpherson, *European Commerce*, p. 6.

Duff, *Chronology*, p. 174.

Yule, in Marco Polo, *Travels*, p. 9.

Robertson, *An Historical Disquisition*, p. 88, Gleig, *History*, I, pp. 312 ff., Duff, *Chronology*, p. 174.

Birdwood, *Report*, p. 130.

Robertson, op. cit., p. 93.

Duff, *Chronology*, p. 258.

Birdwood, *op. cit.*, p. 114.

Genoese—Venice compelled to develop the Southern route.

1291—Fall of Acre.

1300-1306—Marino Sanudo's testimony. Recovery of the Southern route.

1425—Florence concludes commercial treaty with Egypt.

1453—Conquest of Constantinople by the Turks—further decline of the Persian Gulf Route.

1453-1516—Ports of the Black Sea closed to the Genoese.

1498—Discovery of the Cape route and slow diversion of trade.

It will be seen from the above that the Persian Gulf occupied a relatively more important position till the latter half of the thirteenth century, and then the Red Sea route. The discovery of the Cape route to India in 1498 slowly diverted into a new channel the trade with the West, which, for ages, had passed through the Persian Gulf and the Red Sea routes.

Routes to the East.

The routes to the East[494] were two:—one was 'by sea to Chīn and Māchīn, passing by the island of Sīlān, Lāmūri, the country of Sumatra, and Darband Nias a dependency of Jāva, Jampa and Haitam (Hainan?) subject

[494] Rashīdu-d Dīn, Elliot, *History*, I, pp. 70—72, Yule, *Cathay*, III, p. 131 n. 1.

to the Kāān, and so to Māhā Chīn (Canton) Zaitūn and Khansāi'. The other was a land route from Coromandel by way of Bengal and the Indo-Chinese countries.

The sea route is thus described in the *Sungshi,* in giving an account of the mission sent by the Cōḷa Emperor to the court of China:—"After leaving Chu-liēn, they had sailed for 77 days and nights, during which they passed the island (or headland) of Na-wu-tan and the island of So-li Si-lan (Ceylon of the Cōḷas?) and came to the country of Chan-pin (presumably in Pegu). Thence going 61 days and nights they passed the island of I-ma-lo-li and came to the country of Ku-lo (possibly on W. coast of Malay Peninsula), in which there is a mountain called Ku-lo, from which the country takes its name.

"Proceeding again 71 days and nights and passing the island of Kia-pa, the island of Chan (or Ku)—pu-lau (Cham pulo) and the island of Chōu-pan-lung (not identified) they came to the country of San-fo-ts'i.... (Eastern Sumatra).

"Going again for 18 days and nights and having crossed (or passed by) the mouth of the Man-shan river (in Kamboja?), and the T'iēn-chu islands (Pulo Aor?), they came to the Pin-t'ōu-lang headland (Cape Padaran)...... Proceeding 20 days and nights and having passed by Yang island (Pulo Gambir) and Kin-sing island, they came to Pi-p'a island of Kuang-tung (Canton)".[495]

[495]Quoted by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan chï,* pp. 100-101, n. 11.

The risks of navigation may be classified under three groups:—

3. Risks of navigation.

(i) Due to the nature of the sea.

(ii) Due to human agency.

(iii) Connected with the time, or season for navigation.

(a) Due to the nature of the sea.

The difficulties connected with the nature of the sea were serious at a time when the course of voyage was to a large extent determined by the time and strength of wind, and the art of navigation had not been developed to enable the ships to be tacked at will; a rough sea was certainly to be dreaded. Marignolli writing in 1347 A.D. says,[496] "We embarked on board certain junks from Lower India which is called Minubar. We encountered so many storms, commencing from St. George's Eve, and were so dashed about by them, that sixty times and more we were all but swamped in the depths of the sea, and it was only by divine miracle that we escaped". Such complaints and such thanks giving are very common in mediaeval accounts.

Rough sea.

The *'Mohit'* warns[497] sailors to avoid such storms, and whirlpools were more frequent than in other parts of the sea: "Great precaution is necessary against the whirlpools...... the wind blows continually from the

[496] Marignolli, Yule, *Cathay*, III, pp. 230-31.

[497] Sīdī Alī, *The Mohit*, *J.A.S.B.*, V, p. 456.

sea and the current comes from the shore so that the waves and contrary currents are not wanting, and a ship falling in with them runs great risk to be lost, if it is not saved by the grace of God; so it is necessary to avoid these places''. It is interesting to read the direction given in the *Mohit* regarding the approach of a tempest: "The signs of a tempest are great distress, and the summer birds called in *Yaman, ijam,* also the birds, bani, safāf and *amm ul sanānī;* these birds keep then to the shore, flying in the summer on the sea''.[498]

Calm sea.

If a rough sea was dreaded by the small ships, a calm sea was not more desired. The China sea and the neighbouring waters were known by the name of the Arabo-Persian name *al-bahr al-kāhil,* the sluggish or motionless sea.[499] There were no winds or waves or movement at all in it, in spite of its wide extent. It is on account of this sea that each Chinese junk was accompanied by three vessels, which took it in tow and rowed it forwards. Besides this, every junk had about twenty oars as big as masts, each of which was manned by a muster of thirty men or so which stood in two ranks facing each other: "Attached to the oars are two enormous ropes as thick as cables; one of the ranks pulls on the cable [at its side], then lets go, and the other rank pulls [on the cable at its side]. They chant in musical voices as they do this, most commonly saying *la'lā, la'lā*''.[500]

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[498]Sīdī Alī, *The Mohit,* op. cit., p. 457.

[499]Ibn Batuta (*Broadway Travellers*), p. 278, and Gibb, ibid., p. 367 n. 8.

[500]ibid., pp. 278-79.

Besides this there was the danger of shallow water.

Shoals.

'In shallow water, a big ship comes to grief'.[501] 'At sea they are not afraid of the wind and the waves, but of getting shoaled, for they say that if they run aground there is no way of getting off again'.[501a]

'The shores of the said sea in some places run out in shoals for 100 miles or more, so that ships are in danger of grounding'.[502] Vasco Da Gama was told by the Moors that along the route which they were about to follow from Mozambique, they would meet with numerous shoals; ragged rocks also often led to wreckage. From the *Mohit* we learn that in the voyage from Saiban (Loheia) to Sawaken (Lat. 19 4 Long. 34 30) there were invisible rocks the most remarkable of them being the Ahja Tamerkass on which the water was more or less than three fathoms deep and 'great precaution is necessary in all these places.'[503] Examples of wreckages on account of such ragged rocks are given in the Chinese annals.[504] The *Tao i chih lio,* dated 1349 A.D., speaks of the dangers from jagged rocks near the waters of Colombo,[505] rocky ledges with teeth as sharp as the point of a knife which no vessel can withstand.

Invisible rocks.

[501] 1122 *P'ing-chōu-k'o-t'an*, quoted by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, p. 34.

[501a] ibid., p. 31.

[502] John of Montecorvino, Yule, *Cathay*, III, p. 66; see also Vasco Da Gama, *The First Voyage*, p. 32.

[503] Sīdī Alī, *The Mohit, J.A.S.B.*, V, p. 453.

[504] Rockhill, *Notes, T'oung Pao,* XVI, pp. 385, 387, 389, 392, 446, 449

[505] Rockhill, *Notes, T'oung Pao,* XVI, p. 385; also noticed by the *Hsing ch'a shĕng lan*, dated 1436 A.D., *T'oung Pao,* XVI, p. 449.

In certain parts of the sea, the ships had also to take note of the strong currents. The Mozambique current ran so strong towards the south that the ships which should attempt it never would get back again.[506] Finally we may note the 'dangerous fish', 'dangerous men', 'dangerous snakes' and liver eaters[507] which were, all told, not quite negligible. As the *P'ing-chōu-k'o-t'an* would have it, "All these are dangers, from the most of which there is no escape".[508] "There are saw-fish hundreds of feet long, with snouts like saws, and when they strike a ship they cleave it asunder as though it were a piece of rotten wood. When the ship is in mid-ocean, if suddenly there is seen in the distance (something like) a clump of islands covered with dried trees, and the skipper has reason to believe that there is no land in that place, they (know) that it is the sea-serpent (lit., "the dragon-monster"). Then they cut off their hair, take fish-scales and bones and burn them, upon which it will generally disappear in the water".[508a]

Strong currents; dangerous fish, men, snakes and liver-eaters.

The risks due to the existence of piracy—particularly on the west coast—were great. On account of the danger from pirates a single ship was not in a position to determine

(b) Pirates.

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[506] Marco Polo, *Travels*, II, p. 412.

[507] Sulaimān, Renaudot, *Ancient Accounts*, pp. 4-5, *P'ing-chōu-k'o-t'an* cited by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, p. 33, Sīdī Alī, *The Mohit*, *J.A.S.B.*, V, pp. 456 and 463.

[508] *P'ing-chōu-k'ou-t'an*, op. cit., p. 33.

[508a] ibid.

independently its time of sailing. Ships went, if possible, armed and sailed in fleets for better protection. The *Tao i chih lio,* dated 1349 A.D. says clearly[509] they 'go on *in their company*' to escape the pirates which infested the coast (from Kainkolam to Calicut).

Pirates came from every source. Besides the professional wholetime pirates, the peaceful fishermen whose livelihood in the winter season was 'nought but fishery', turned pirates in summer: "In the summer they live by robbery of all they can find and everything they can take on the sea. They make use of small rowing vessels with a *bargatim.* They are great oarsmen and a multitude of them gather together all armed with bows and arrows in plenty, and thus they surround any vessel they find becalmed, with flights of arrows until they take it and rob it."[510]

The West Coast was in particular the home of piracy from very early times. Pliny speaks of pirates as having committed depredations on the Roman trade to East India.[511] They are referred to by Rennel in 1780: "Few countries with so straight a general outline are so much broken into bays and harbours. The multitude of shallow ports, an uninterrupted view along the shore and an elevated coast favourable to distant vision have always fitted this tract of country for piracy.[512] Details of their activities are supplied to us

[509]See also *Tao i chih lio,* Rockhill, *Notes, T'oung Pao,* XVI, p. 446; italics are mine. Marco Polo, *Travels,* II, p. 389.

[510]Barbosa, *An Account,* II, p. 96.

[511]Gribble, *A History,* I, p. 118, Periplus (Schoff), p. 44.

[512]Rennell, *Memoir,* pp. xxx—xxxviii, quoted by Nairne, *The Konkan* in *Bombay Gazetteer,* I, part ii, p. 1.

in the pages of Marco Polo. From the coast of Guzerat and Malabar, there went forth every year more than a hundred corsair vessels on cruise. They took with them their wives and children and stayed out the whole summer.[513] Their method was to join in fleets of 20 or 30 of the pirate vessels together and then they formed what they called a sea cordon, that is "they drop off till there is an interval of 5 or 6 miles between ship and ship, so that they cover something like an hundred miles of sea, and no merchant ship can escape them". When any corsair sighted a vessel, a signal was made by fire or smoke and then the whole of them made for this, seized the merchants and plundered them. After they had plundered them they let them go saying: "Go along with you and get more gain and mayhap will fall to us also".

Their method of attack.

Elsewhere there were men of the sea—*Oranglaut* or sea-gipsies who were found sojourning from Sumatra to the Moluccas. The only habitations of this people were their boats and they lived exclusively by the produce of the sea, or by the robberies which they committed on it.[514]

That pirates were encouraged by some kings seems to us queer, and appeared so also to the honest Marco, who says 'the practice is naughty and unworthy of a king'; yet the ruler of Tāna did not consider it so. Marco Polo says

Encouraged by kings.

[513]Marco Polo, *Travels*, II, p. 389.

[514]Badger in Varthema, *Travels*, p. lxxxviii, p. 227. Cf. Crawfurd, *Descriptive Dictionary*, p. 250.

that with this king's connivance many corsairs launched from Tāna to plunder merchants. They had a covenant with the king that he was to get all the horses they captured, while all other plunder was to remain with them. The king did this because he had no horses of his own, while many were shipped from abroad towards India.[515] A somewhat similar practice was noticed in Oner, about 1562. 'They were fustas of thieves, which, with oars and sails, get into a river called Onor, where there was a Moor who equipped them, named Timoja. This Moor was a foreigner and *paid part of the plunder to the king of Garśopa* who was ruler of the country'.[516] The same practice is noted by Barbosa as having existed on the coast of Quilon: "they take much spoil, part whereof they give to the lord of that land".[517] Marco also notices one atrocious practice followed by the pirates near the coast of Guzerat: "When they have taken a merchant vessel they force the merchants to swallow a stuff called Tamarindi mixed in sea water which produces a violent purging. This is done in case the merchants, on seeing their danger, should have swallowed their most valuable stones and pearls;[518] at times[518a] they also slew the crew. Complaints regarding

[515]Marco Polo, *Travels*, II, p. 395.

[516]Vasco Da Gama, *The Three Voyages*, p. 309, italics are mine.

[517]Barbosa, *An Account*, II, p. 96.

[518]Marco Polo, *Travels*, II, p. 392, see also Barbosa, *An Account*, I, p. 153.

[518a]Barbosa, *An Account*, I, p. 153,

pirates are heard through all the centuries.[519] We may well conclude therefore that throughout the middle ages, the merchant at sea faced dangers of violence which were probably as serious an obstacle to the growth of commerce as the physical difficulties of navigation.

Complaints regarding pirates.

Closely akin to piracy, was the practice apparently widely prevalent in the middle ages of what we may call "Track-off".

If a ship was driven by stress of weather into some other port than that to which it was bound, it was sure to be plundered, under the pretext 'you were bound for somewhere else and it is God who has sent you hither to us. So we have a right to all your goods.'[520] According to the *P'ing-chōu-k'o-t'an* both ship and cargo were confiscated, and the men were bound and sold, (the robbers and the people of the place) saying: 'It was not your purpose to visit this place' and hence traders used to say that it was only when the vessel was large and the number of men considerable that they dared put to sea. And this practice was in contrast to the ordinary practice followed; for if a ship came bound originally to the place, they received

Track-off.

[519] 1122, *P'ing-chōu-k'o-t'an*, cited by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, p. 31. 1349 A.D., *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 446. 1470, Nikitin, Major, *India*, p. 11—The sea is infested with pirates. 1498 Vasco Da Gama, *The Three Voyages*, p. 309. 1515 Barbosa, *An Account*, I, p. 153, II, p. 96. 1519 Hill, *Piracy*, *Ind. Ant.*, XLVIII, pp. 159 ff.

[520] 1122 *P'ing-chōu-k'o-t'an*, quoted by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chï*, p. 31. 1293, Marco Polo, *Travels*, II, pp. 385-86. 1443, 'Abdu-r Razzāk, Major, *India*, p. 14.

it with all honour and gave it due protection.[521] Only at Calicut, according to 'Abdu-r Razzāk, every ship whatever place it may come from, or wherever it may be bound, when it puts into this port is treated like other vessels, and has no trouble of any kind to put up with.[522]

(c) The time for navigation.

The biggest single factor which sailors had to take into account was the time for navigation. This applied both to the East and to the West: There was only one season in which the sea of China was navigable and so a ship starting from Quilon or Calicut to Zayton had to wait for the season of navigation; this period of waiting sometimes extended to three months.[523] Usually ships started from the shores of India in summer to take advantage of the south-west monsoon and returned in winter. Marco Polo puts the matter well: "It takes them a whole year for the voyage, going in winter and returning in summer. For in that sea there are but two winds that blow, the one that carries them outward and the other that brings them homeward; and the one of these winds blows all the winter, and the other all the summer. And you must know these regions are so far from India that it takes a long time also for the voyage thence."[524]

The East.

The Chinese authority agrees in essentials; the *P'ing-chōu-k'o-t'an* says, "ships sail in the eleventh or twelfth moons to avail themselves of the north wind

[521] Marco Polo, *Travels*, II, p. 386.

[522] 'Abdu-r Razzāk, Major, *India*, p. 14.

[523] Ibn Batuta (Lee), p. 172.

[524] Marco Polo, *Travels*, II, pp. 264-65.

(the north-east monsoon), and come back in the fifth or sixth moon to avail themselves of the south wind (the south-west monsoon)".[525]

The West.

The voyage to Aden was regulated on the same principle. In the words of the contemporary traveller, "They cannot make the voyage but once a year, for from the beginning of April till the end of October the winds are westerly, so that no one can sail towards the west; and again 'tis just the contrary from the month of October till March. From the middle of May till the end of October the wind blows so hard that ships which by that time have not reached the ports, whither they are bound, run a desperate risk, and if they escape it is great luck. And thus in the past year there perished more than sixty ships; and this year seven ships in places in our own immediate neighbourhood, whilst of what has happened elsewhere we have no intelligence."[526]

This last was an important consideration. It meant the ports of the west coast were practically closed for trade from May to September. The incoming vessels therefore aimed at reaching a port in fine weather.[527] The weather in June and July proved so tempestuous as to render the navigation of the Indian ocean perilous, if not almost impracticable. By the month of October fine weather with steady breezes could be depended upon. Accordingly ships arriving

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[525] Quoted by Hirth and Rockhill in Chau Ju-Kua, *Chu-fan-chi*, p. 30.

[526] John of Montecorvino, Yule, *Cathay*, III, p. 66.

[527] See Varthema, *Travels*, p. 153, Barbosa, *An Account*, II, pp. 63 and 77.

from the Red Sea left Berenice about the 10th of July and reached the mouth of the Arabian Gulf within a month; remained at Okelis for a week, ten days, or fortnight, and by this arrangement the vessels bound for the coast of Malabar reached their destination at the best season of the year. The voyage west was regulated by the same experience. Remaining on the coast of India from the end of September, or beginning of October, to the early part of December, two months of the finest weather were thus obtained for the discharge of the vessels and the disposal of their cargoes, as also for taking on board the return lading in exchange. The second week of January was fixed as the earliest date for leaving the coast. Quitting the coast of India on or about the 10th of January, they could easily reach Aden in twenty or thirty days, where they would most probably remain until they could derive the benefit of the Gunseen winds, which, from about the middle of March, blow steadily from the south for fifty or sixty days, and thus have a fair wind to carry them to Berenice. Thus the winds prevailing in the Gulf at different seasons of the year were as valuable to the ancient ships as the true monsoons in the Indian Ocean.[528]

The monsoons of separate ports.

In addition to winds prevailing in the Red sea, it was important for the mariners to know that the monsoon of each country was limited by its fixed time—a point on which the author of the *Mohit* dwells at length.[529] He points out fifty different dates

[528] Lindsay, *Merchant Shipping*, I, pp. 107-08.
[529] Sīdī Alī, *The Mohit*, *J.A.S.B.*, III, p. 547.

suitable for starting from and entering various ports on the Indian coasts—a detailed study made from experience and no doubt well known to the mariners of the period. This only meant that the sailors had to be more vigilant regarding the time of leaving and entering particular ports, as delay might lead to loss of person and property. It is amusing, at this distance of time, to read 'Abdu-r Razzāk's complaints of the difficulties he experienced on this account: "The merchants ....cried with one voice that the time for navigation was passed, and that every one who put to sea at this season was alone responsible for his death, since he voluntarily placed himself in peril......... In consequence of the severity of pitiless weather and the adverse manifestations of a treacherous fate, my heart was crushed like glass and my soul became weary of life".[530]

4. Equipment: mast, sail, rudder, anchor.

The difficulties attendant on navigation cannot be fully appreciated until we take into account the equipment which the mariners had in masts, rudder, anchor, etc. as well as nautical instruments. Taking the former, first, we must distinguish between the huge Chinese junks and the smaller ships of the Moslem and Hindu traders on the coast of the Indian sea. The former had 4 or 6 masts, from three to twelve sails, and twenty oars, besides three tenders the Half, the Third and Quarter, which helped to tow the big ones in calm seas. Again they had huge wooden anchors

[530] 'Abdu-r Razzāk, Major, *India*, pp. 7-8.

which held in all weather, and were specially useful on the shores of South India, because there was no harbour other than the river mouth, a mere roadstead and sand-banks.[531] Their rudders too were several tens of feet long.[532] The smaller ships of the Indian coasts were a strange contrast to them. Montecorvino's description is brief and to the point: Their ships in these parts are mighty frail and uncouth, with no iron in them, and no caulking........ And they have a frail and flimsy rudder like the top of a table, of a cubit in width, in the middle of the stern; and when they have to tack, it is done with a vast deal of trouble; and if it is blowing in any way hard, they cannot tack at all.[533] They have but one sail and one mast, and the sails are either of matting or of some miserable cloth. Having only one mast, they could make headway only with the wind astern, and sometimes were obliged to wait from four to six months for fair weather,[534] (the monsoon or season).

Their anchor too was a very small one, according to Varthema, a piece of marble eight palmi long and two palmi every other way, with two large ropes attached to it. They had also anchors of hard wood, and they fastened stones to the shanks so that they were heavy and went to the bottom.[535]

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[531]Marco Polo, *Travels*, II, p. 386, *P'ing-chōu-k'o t'an*, quoted by Hirth and Rockhill, in Chau Ju-Kua, *Chu-fan-chï*, p. 30.

[532]Choū K'ü-feï, quoted in Chau Ju-Kua, *Chu-fan-chï*, p. 33.

[533]John of Montecorvino, Yule, *Cathay*, III, pp. 66-67.

[534]Vasco Da Gama, *The First Voyage*, p. 128.

[535]Vasco Da Gama, *The Three Voyages*, p. 241.

Of aids in the way of nautical instruments and charts, however, we learn from *the Mohit* that the Arabs and the Chinese had some ideas. The *Mohit* devotes two chapters,[535a] for a description of the instruments necessary to measure the distance of the stars, the making of these instruments, of the calculation necessary to take the height of the stars, etc. Similarly another chapter[536] deals with the composition of charts and maps. Contemporary travellers also confirm the statements of the *Mohit*: "When sailing out of sight of land the skippers steered by the sun, moon and stars". The *P'ing-chōu-k'o-t'an* in the latter part of the eleventh century says, 'The ship masters know the configuration of the coasts; at night they steer by the stars and in the day time by the sun.'[536a] This mode of steering continued far late into the middle ages. They had, however, an elaborate process of reefing a sail, which, judging from the description[537] given by the early Portuguese annalists, was perhaps even unknown in Europe.

Nautical instruments.

The cross-staff and quadrants also seem to have been used by the mariners.[537a]

Quadrants.

Thus, while, in the main, skippers trusted to the observation of the altitudes of certain stars, it is clear that the mariners' compass was also *coming into gradual use.* The evidence for determining the earliest application

The mariners' compass.

535a III and IV.

536 Ch. VII, sect. iv.

536a Cited in Chau Ju-Kua, *Chu-fan-chï*, p. 32.

537 Stanley in Vasco Da Gama, *The Three Voyages*, p. 242, n. 2.

537a Vasco Da Gama, *The Three Voyages*, pp. 137-38, and n.

of the magnetic principle in navigation has been discussed in many modern works;[538] for our purpose, we may note that the earliest reference, so far known, to the mariners' compass being used in navigation occurs in a work of the latter half of the eleventh century;[539] in clear weather, the captains ascertain the ship's position at night by looking at the stars, in the day-time by looking at the sun; "when the sun is obscure, they look at the south-pointing needle".[540] But the fact that the compass was *begun* to be used then does not mean that it was *habitually* used. The accounts of voyages which have come down to us would lead to the view, that the compass did not play a considerable role in navigation; the sailors in the Indian vessels in which Nicolo Conti traversed the India seas in 1420[541] had no compass. In 1498 the Moors did not 'guide themselves by the pole in navigating the gulf' but trusted to quadrants of wood.[542] The sounder conclusion from the available evidence would be that the compasses early used were mostly too imperfect to be of much assistance to navigators and were therefore often dispensed with in customary routes.

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[538]Badger in Varthema, *Travels*, I, pp. 31-32 n., Beazley, *Modern Geography*, I, pp. 489-90, Hirth and Rockhill, in Chau Ju-Kua, *Chu-fan-chï*, pp. 28-29 n., Hirth, *Ancient History*, pp. 126-36, Reinaud, *Geographie d' Aboul feda*, I, Ch. III—IV, Renaudot, *Ancient Accounts*, pp. viii—ix, Robertson, *An Historical Disquisition*, p. 227.

[539]*P'ing-chŏu-k'o-t'an*, in Chau Ju-Kua, *Chu-fan-chï*, pp. 30-34.

[540]*P'ing-chŏu-k'o-t'an*, in Chau Ju-Kua, *Chu-fan-chï*, p. 32.

[541]Conti, Major, *India*, p. 26.

[542]Vasco Da Gama, *The First Voyage*, p. 134.

Charts.

Of charts we have the evidence again of Marco Polo who speaks of 'the charts of the mariners of these seas'.[543] Vasco Da Gama also mentions their navigating charts.[544] The Moor referred to above also showed Vasco Da Gama a map of all the coast of India, with the bearings laid down after the manner of the Moors, which was with meridians and parallels very small (or close together), without other bearings of the compass; because, as the squares of those meridians and parallels were small, the coast was laid down by those two bearings of north and south, and east and west, with great certainty, without that multiplication of bearings of the points of the compass usual in our maps.[545]

Slowness of navigation.

We are now in a position to appreciate the extreme slowness of navigation in the middle ages. The risks of the sea, the dangers arising from pirates, the dependence on the wind and the lack of facilities due to the want of proper equipment made navigation extremely slow. Purchas[546] discussing the extreme slowness of navigation in ancient days calculates thirty-two to forty miles a day as the average distance traversed by a ship, though the actual records of voyages handed down to

[543] Marco Polo, *Travels*, II, pp. 312-13.

[544] Vasco Da Gama, *The First Voyage*, p. 26.

[545] Vasco Da Gama, *The Three Voyages*, pp. 137-38 n.

[546] Purchas, *His Pilgrimes*, I, pp. 110 ff.

us[547] would show this must be taken only as a very rough guess.

5. Some habits of seamen: superstition and reverence for saints.

Before we conclude this sketch of navigation, we may touch upon some habits of the seamen in the middle ages. Superstition, swearing and reverence for saints were common enough among them.[548] The habit of consulting astrologers for the auspicious day and the hour to start on a voyage was common.[549] The favour of god Fong-lung, e.g. was asked

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[547] Voyages from the West Coast to Ormus and Aden or to the East Indies—

1320 Ormus to Tāna——28 days, Odoric, Yule, *Cathay*, II, p. 114.

1340 Maldives to Bengal—43 days, Ibn Batuta (Defrēmery), IV, p. 210.

1340 Java to Quilon—40 days, Ibn Batuta, (Defrēmery), IV, p. 309.

1349 Calicut to Ormus—25 days, *Ying yai shĕng lan*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 604.

1349 Calicut—Aden 30 days, ibid., p. 607.

1443 Mascat—Calicut 18 days, 'Abdu-r Razzāk, Elliot, *History*, IV, pp. 97-98.

1470 Calicut to Cambay—15 days Nikitin, Major, *India*, p. 19.

„	Ormus—Kalat—	10	„	„
„	Kalat—Degh—	6	„	„
„	Degh—Mascat—	6	„	„
„	Mascat—Gujarat	10	„	„
„	Cambay—Chaul	12	„	„
„	Chaul—Dabul	6	„	„
„	Dabul—Calicut	25	„	„
„	Calicut—Ceylon	15	„	„

1498 Malacca—Judda—50 days, Vasco Da Gama, *The First Voyage*, pp. 77-78.

„ Red Sea—3 months, Vasco Da Gama, op. cit., p. 87.

1499 Calicut—Ceylon—26 days, Stefano, Major, *India*, p. 5.

[548] Lindsay, *Merchant Shipping*, I, p. 538.

[549] Barbosa, *An Account*, II, p. 62.

for favourable winds in calm weather; Nicolo also tells us that on one occasion when he was commander of a ship they were becalmed for seven days in the midst of the ocean; the sailors, fearing that the calm might continue, assembled together at a table placed by the mast, and having performed various sacred rites over it, danced round it, calling frequently on their god Muthia, by name.[550] Nicolo continues, with all seriousness, that one of the Arabs, being then possessed by the demon, began to sing, demanded the blood of a cock as a drink, and, when supplied with it, promised prosperous wind and at the end of three days, lo there was a wind![551] Equally so in rough weathers holy water was used to still the wind and waves: "In this country there is holy water which can still the wind and waves. The foreign traders fill opaque glass bottles with it, and when they suddenly get in a rough sea they still it by sprinkling this water on it".[552] This holy water was taken from the well behind the tomb of Mahomed. Its water was "limpid and sweet........(and had) the property of appeasing the waves in time of storm when sprinkled over the sea".[553] Offering to patron saints was also common. The Shaikh Abu Ishak of Kazerūn, e.g., was one such patron saint of the mariners in the India and China trade, who made vows of offerings to his shrine when in trouble at sea; and agents were employed at the

550 Conti, Major, *India*, p. 26.

551 Ibid.

552 Chau Ju-Kua, *Chu-fan-chi*, p. 111.

553 Bretschneider, *Mediaeval Researches*, II, p. 303. Chau Ju-Kua, *Chu-fan-chi*, p. 113, n. 2.

different ports to board the vessels as they entered, and claim the amounts vowed, which generally came to large sums.[554] Ibn Batuta, on one occasion, made it his pleasant duty to write their vows all down in a list with his own hand; he tells us: "Every one also betook himself to humiliation and repentance and renewal of good resolutions". "We addressed ourselves to God in prayer", he continues, "and sought the mediation of the prophet, (upon whom be peace!)"[555] In short as the *P'ing-chōu-k'o-t'an* puts it well, in 1122 A.D., sailors gave heed to the saying 'To cross the sea is dangerous, but pray and you will see to the vault of heaven, and in nothing will help fail you. On their arrival at Kuang-choō they make the bonzes presents of food, which is called a 'Lo-han feast'.[556] Of other practices of sailors, their custom of disposing of the dead is noteworthy: "When a man sickens, he fears dying on ship-board, for usually before the breath has left his body, he is rolled up in several layers of matting and thrown into the sea, and, as it is desired to have the body sink, several earthenware jars are filled with water and tied in the matting before it is thrown overboard. The crowd of fish have devoured the body and the matting before it can get down very far".[557]

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[554] Ibn Batuta (Defrēmery), II, pp. 90-91, see also Yule, *Cathay*, IV, p. 120.

[555] Ibn Batuta (Defrēmery), IV, pp. 305-06.

[556] *P'ing-chōu-k'o-t'an*, in Chau Ju-Kua, *Chu-fan-chï*, p. 33.

[557] ibid.

Discipline.

On the question of discipline in the crew, we have some evidence, regarding Chinese ships. On large sea-going vessels every several hundred men and on small ones a hundred and more men chose one of the more important traders as head-man, who, with an assistant head-man, managed various matters. The Superintendent of merchant shipping (at Canton) gave them a certificate permitting them to use the light bamboo for the punishing of their followers.[558]

Efficiency of the mariners.

As to the quality of the mariners, we have divergent opinions from contemporary writers. One view is that mariners were few and far from good; hence they ran a multitude of risks and were wont to say when any ship achieved her voyage safely and soundly, that ' 'tis by God's guidance, and man's skill hath little availed'.[559] On the other hand, we have, the testimony of 'Abdu-r Razzāk[560] that the sailors of Calicut were bold navigators; they were known by the name of Tchini-betchegan (sons of the Chinese), and the pirates did not dare to attack the vessels of Calicut—a testimony which gives credit to both kinds of sailors. To the same effect is the testimony of Barbosa,[561] who speaks of them as 'very expert seamen'. The ships' crew also were expected to be 'jack of all trades'—

[558] Chau Ju-Kua, *Chu-fan-chï*, pp. 30-31.

[559] John of Montecorvino, Yule, *Cathay*, III, p. 67.

[560] 'Abdu-r Razzāk, Major, *India*, p. 19.

[561] Barbosa, *An Account*, II, pp. 64—65. Barbosa says this with special reference to one class of people in Calicut, the *Monquer*, i.e., the Mukkuvan, the principal fishing caste throughout Malabar.

carpenters,[562] rope-makers, caulkers, blacksmiths and plank-makers; and generally, the Arab sailors were 'as well instructed in many of the arts of navigation and did not yield to the Portuguese mariners in the science and practice of maritime matters.' [563]

(7) THE STATE AND COMMERCE

Introductory—The theory—Practice—Limitations—Security—Missions—The State a large consumer—Evidence of the *Mitākṣarā*—Customs at the South Indian ports—Foreign ports.

Introductory.

In dealing with the several aspects of commerce, we have had occasion incidentally to refer to the influence of the state on the development of foreign trade. It remains to bring the threads together and present a connected sketch of the part the state played in commerce. We do not mean that there was one unified policy, followed throughout the middle ages by all the kings: we have not to deal with one central authority whose influence was felt over all the Indian ṣeas, but with a multitude of princes, each acting independently of the others; we can indicate only the general nature of this influence and its results in developing or retarding the growth of this commerce.

The theory.

It is interesting to observe at the outset that the necessity for the state to encourage foreign trade was realised by the theorist:[564] "A king should improve the harbours of his country and so encourage its commerce

[562] Vasco Da Gama, *The Three Voyages*, p. 34.

[563] Vasco Da Gama, *The Three Voyages*, pp. 137-38 n.

[564] Sarasvati, *Political Maxims*, *J.I.H.*, IV, part iii, p. 70.

that horses, elephants, precious gems, sandalwood, pearls and other articles are freely imported into his country. He should arrange that the foreign sailors who land in his country on account of storms, illness and exhaustion are looked after in a manner suitable to their nationalities." That the object in advocating such friendship was partly political is seen from the following verse:

"Make the merchants of distant foreign countries who import elephants and good horses attach to yourself by providing them with villages and decent dwellings in the city, by affording them daily audience, presents and allowing decent profits. Then those articles will never go to your enemies".[565]

Practice.

Practice generally agreed with theory. Kings encouraged foreign traders to come to their ports. The Mahomedan traders who went on business were honourably received by the king and his ministers, and found protection and safety.[566] The king of Kāyal extended great favour to merchants and foreigners, so that they were very glad to visit his city.[567] Such good treatment had its beneficial result: the merchant who went with goods from South India also received such kind treatment: 'You are most welcome'.[568]

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[565] Ibid., p. 72.

[566] Al Idrisi, Elliot, *History*, I, p. 88.

[567] Marco Polo, *Travels*, II, p. 371. See for other examples, supra, Ch. V, sect. (3).

[568] Rockhill, *Notes*, *T'oung Pao*, XV, p. 432.

This favour shown was, however, limited by one condition, viz., that the ship must have been originally bound for the place. But if any ship entered a harbour having been bound for some other port they seized her and plundered the cargo. According to the testimony of several travellers, this custom prevailed in almost all harbours, Calicut being a notable exception.[569] The contents of the Mōṭupalli inscription[570] show that till 1244 Mōṭupalli also suffered from such. About that year, however, Gaṇapatidēva Mahārāya gave to the merchants trading on sea a charter—*abhaya-śāsana*. The necessity for the charter was that kings of old used to confiscate by force all the cargo, gold, elephants, horses, precious stones etc. of vessels enroute from one country to another which being driven by unfavourable winds were stranded and wrecked in the sands. By the charter[571] Gaṇapatidēva assured safety to traders by sea starting for and arriving from all continents, islands, foreign countries and cities: "Formerly kings used to take away by force the whole cargo, viz. gold, elephants, horses, gems, etc., carried by ships and vessels which, after they had started from one country for another, were attacked by storms, wrecked, and thrown on shore. But we, out of mercy, for the sake of glory and merit, are granting everything besides the fixed duty (*kḷpta-śulka*) to those who have incurred the great risk of a

Limitations.

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[569] Marco Polo, *Travels*, II, pp. 385-86. 'Abdu-r Razzāk, Major, *India*, p. 14.

[570] *Ep. Ind.*, XII, pp. 188—97, *A.R.E.*, 1910, part ii, paras 45 and 61.

[571] *Ep. Ind.*, XII, pp. 188 ff.

sea-voyage with the thought that wealth is more valuable than even life," and the rates follow.

Security.

It was the duty of the state also to see that security was maintained in the harbour to which foreign merchants resorted. Benjamin of Tudela says that whenever foreign merchants enter their port (at Chulam) three secretaries of the king immediately repair on board their vessels, write down their names and report them to him. The king thereupon grants them security for their property which they may even leave in the open fields without any guard.[572] 'Abdu-r Razzāk noted that such security and justice reign in that city (Calicut) that 'rich merchants bring to it from maritime countries large cargoes of merchandise, which they disembark and deposit in the streets and market places, and for a length of time leave it without consigning it to any one's charge, or placing it under a guard'.[573]

As a correlative to security, the king also took care of unclaimed property. Says Benjamin, "one of the king's officers sits in the market, and receives goods that may have been found anywhere, and which he returns to those applicants who can minutely describe them. This custom is observed in the whole empire of the king."[574] What want of security would result in is

[572] 1160—74, Benjamin, Major, *India*, p. xlvii.

[573] 'Abdu-r Razzāk, Elliot, *History*, IV, p. 98.

[574] Benjamin, Major, *India*, xlvii, cf. Vijñānēśvara, *The Mitākṣarā*, ii, 33.

shown by the events in the reign of the Vijayanagar king Virūpākṣa; on the West Coast his maladministration caused the Arab horse traders who had settlements on the West Coast to transfer their places of business from the ports of the kingdom to those beyond the Vijayanagar frontier.[575]

Missions.

Another way in which the state tried to encourage foreign trade was by sending missions or embassies to foreign countries. Those sent by the king of Mabar and Malabar to China, and those sent by the Celestial Emperor in return have been recorded in Chinese annals.[576]

From Ma'bar.		*From China to Ma'bar.*	
1279		1281	Ha-sa-erh-hai-ya and Yang Ting-pi
1280		1285	Ma-su-hu and A-li.
1283	Sêng-tso-yu-pan	1287	I-hei-mi-shih.
1284		1290	Sang-ki-la-shih.
1286		1291	
1288		1296	Yo-lo-yeh-nu.
1288			
1289			
1314	Ai-ssŭ-ting		

From Quilon.		*From China to Quilon.*	
1282	Chu-a-li-sha-mang-li-pati	1280 A.D.	Yang Ting-pi and Ha-sa-erh-hai-ya
1286	Pu-lin-wên-nai	1282	
		1283 A.D.	Yang Ting-pi.
		1344	

Though in some instances these appear to have had a political aspect, viz. demanding allegiance, yet, their

[575] Haig, *Cambridge, History*, III, p. 494.
[576] Rockhill, *Notes*, *T'oung Pao*, XV, pp. 430-43.

primary purpose was to encourage the commercial intercourse between the countries concerned.

The state a large consumer.

Indirectly the state encouraged commerce by itself being a consumer, ready to pay high prices. This is specially illustrated by the import of horses, the kings of Madura being prepared to pay, in the words of Nuniz "just as they asked", and even for those that died at sea, if they brought the tail as evidence.[577]

Evidence of the *Mitākṣarā*.

The interference of the state would seem to be advocated to greater lengths in the *Mitākṣarā,* for the jurist would have the king regulate the profit of the merchant on a commodity arriving from another country in a way equitable both to the buyer and the seller so that a profit of ten per cent. could be made;[578] and those demanding a wrong price were to be punished.[579] It is enough to say that this was a mere expression of a pious wish; we have no evidence to show its practice. A somewhat earlier inscription of Sthāṇu Ravi from Kēraḷa, no doubt, implies that the fixing of prices was considered one of the functions of the king.[580] But the evidence is too meagre to say that this was the universal practice.

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[577] supra, ch. V, (2).

[578] Vijñānēśvara, *The Mitākṣarā,* ii, 253.

[579] Ibid., 250.

[580] *Trav. Arch. Series,* II, p. 84, lines 32-35.

We have only stray evidence regarding customs at the South Indian ports;[581] it is generally expressed in two forms i. a general percentage on all goods alike, and ii. specific duties on particular items of goods. Of the former, we may cite 3⅓% on all at Mōṭupalli in 1244, 2½% at Calicut in 1441, and 5% at the same place in 1498. As examples of the latter we may cite that in 1244, at Mōṭupalli rosewater ivory, civet, camphor-oil, copper, zinc, lead, silk-threads, corals, and perfumes, paid 1¼ plus ⅛ *fanam* on every pagoda-value, sandal 1 pagoda 1¼ *fanam* on one tola, Chinese camphor and pearls ¾ and ⅝ *fanam*. There was 20% duty on pepper at Calicut in 1349; and 25 ducats on each horse in 1504 at Cannanore. It is interesting to note, regarding Calicut, that the duty of 2½% was levied only when the sale was effected; if the goods were not sold, they made no charge on them whatsoever.[582]

Customs at the South Indian ports.

The customs levied at foreign ports may be reduced to a more systematic form:—

Foreign ports.

1277	China	fine articles	..	10%
		coarse	..	6⅔%
1293	„	all goods	..	10%

[581] *Ep. Ind.*, XII, p. 197, 'Abdu-r Razzāk, Elliot, *History*, IV, p. 99, *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 454, *Trav. Arch Series*, II, p. 84,, Varthema, *Travels*, p. 124, Vasco Da Gama, *The First Voyage*, p. 130, 'Abdu-r Razzāk, Major, *India*, p. 14.

[582] 'Abdu-r Razzāk, Major, *India*, p. 16. It is difficult to reconcile 'Abdu-r Razzāk's 2½% with Wang Ta-Yüan's 2|10 in 1349 A.D. *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 454.

1314	China	fine ..	20%
		coarse ..	13⅓%
1441	Ormus	all goods with the exception of gold and silver ..	10%

The idea underlying customs seems to have been in the nature of a fee offered by merchants to obtain the king's protection for his goods;[583] the officers of the custom-house had the merchandise under their protection and kept guard round it night and day.

[583]supra, p. 656 and 'Abdu-r Razzāk, Elliot, *History*, IV, pp. 98-99.

CHAPTER VI

The Sphere of the State.

(1) INTRODUCTORY

Scope of this chapter

Scope of this chapter.

The sphere of the state in the economic life of a people is, in the modern world, one of deliberate planning, it being now generally conceded that the state should help the better production and distribution of wealth. In the middle ages, however, we cannot say that the state adopted such a deliberate economic policy; much was stereotyped by the class organization of society; moreover, the larger problems of modern economic organization had not arisen for the state to tackle them.

The sphere of the state, however, was not unimportant. Its activities necessarily touched the economic life of the subject at more than one point. It could help them by providing security for work, and take some part in developing agriculture and regulating industry and trade. By imposing heavy taxes it might ruin agriculture and industry, or it might encourage them by moderate demands. Provision of currency was generally its special prerogative. An attempt is made in the following sections to discuss these activities as far as our evidence permits.

(2) SECURITY

The protective function of the state—The responsibility of the king—Of local officers—Of villagers—Evidence on the state of security—Severity of punishments—Evidence not conclusive; the sense of security.

The protective function was undoubtedly the most important function of the state, so much so the *Āmuktamālyada* lays down that a king should devote 'two parts of his income out of four' for the maintenance of a strong army; "he should destroy all thieves in his territory", and rightly, for obviously security from internal disorder and external aggression is the *sine qua non* for the development of agriculture, industry and trade. Our evidence on the subject cannot be said to be exhaustive; we have only some indications.

The protective function of the state.

First, it is clear that kings were enjoined to take great care to give protection to their subjects: 'There exists no higher duty for kings than this that........ they should give the gift of security to their subjects.' The protection of subjects carried greater fruit than gifts of land and the rest. Any neglect of the king on this score meant ruin for him: "The heat which arises through the suffering of the subjects caused by the oppression of thieves, etc., is like the blazing physical fire representing the sinful deeds of the causer of oppression. That fire does not cease burning or is not extinguished till it has burnt down or destroyed the family, fortunes and life of the king." The king was advised to be always intent upon protecting his

subjects: "whenever you hear complaints from people in distress, hear them and redress their sufferings".[1]

These sentiments find their counterpart in Tamil Literature: The king is responsible for the evil deeds in his state. The king must guard his people from evil due to himself, his relations, thieves, wild beasts and enemies. The protection of the people in the performance of their *dharma* and the destruction of the tyrants who prey upon the people in various ways: these are the duties of every just king.[1a]

The responsibility of the king.

The responsibility of a king to protect the subjects is thus clearly recognized; he was to punish the guilty, while he was warned against punishments being visited upon the innocent through his negligence;[2] he was even expected to issue instructions[3] to his officers to call back the subjects when they left the state on account of suffering. This responsibility is further emphasized when it is laid down that if the king neglected the recovery of property stolen by thieves, he should pay as much amount from his treasury.[4] His local officers and villagers also had some responsibility. The provisions on the subject are as old as Hindu law and we find little that is new in the commentaries of the period: Thus "if the killing of man or of any other living animal or a deprivation of property

Of local officers.

[1]Sarasvati, *Political Maxims*, *J.I.H.*, IV, part iii, p. 64.

[1a]*Kural*, 541 ff.

[2]Sarasvati, *Political Maxims*, *J.I.H.*, IV, part iii, p. 81.

[3]ibid p. 69.

[4]Vijñānēśvara, op. cit., ii, 36.

takes place in a village, the blame for neglecting a thief would be that of the headman of the village alone, and to atone for it he himself must catch the thief and hand (him) over to the king; when he is unable to do that, he should pay the stolen amount to the owner if he does not point out the foot marks of the thief to have emerged from out of the village and beyond it. When, moreover, such marks are pointed out wherever the same (appears to) enter, the owner of such property alone should make over the stolen amount".

Similar rules are also laid down for the responsibility of neighbouring villagers.[5]

Of Villagers.

The duty of the citizen for raising a hue and cry is also touched upon. He, who, upon a cry for help being raised by persons frightened by thieves and like others, does not run for help even when he is able, as also he, who, without proper cause raises a cry for help, was to be fined. When, however, the king was not able to cause property to be restored then he should indeed pay from his own treasury.[6]

It is interesting to note that the responsibility of the village officers for thefts committed within the village was sought to be moderated by two considerations. Those who were on police duty were given additional grants of land,[7] inasmuch as they had to "make good the loss of any property within the limits

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[5] Vijñānēśvara, *The Mitākṣarā*, ii, 271 and 272.

[6] ibid., 234.

[7] 1361 A.D.—*A.R.E.*, 1913, Appendix A, Copper-plates 9 and 14 and part 1, para 11.

of the village boundary"; and secondly their obligation was limited by the extent of their means, the remainder being levied on the village as a whole; and it is possible that the indemnity was not enforced at all.

It would be interesting to know how far these theoretical maxims were actually put into practice. We have accounts of kings trying to put down internal disorder with a strong hand.[8] In one instance the king even gives previous warning to the possible rebels that they would be heavily fined if they proved a source of trouble to the people, even up to 20000 *kāśu,* and that in case of default, they would be liable for forfeiture of their lands 'to realise the fines imposed'.[9] That the *kāval* (police) officers were also punished for neglect of duty is evident from an inscription[10] of the middle of the fourteenth century: it is stated that they [the police officers] had long lived in the place and had been discharging the duties of *kāval* (police); many dacoities and disturbances had occurred in the village and that consequently the particular *agambaḍiyārs* (servants), about 48 in number, had either to be punished or otherwise corrected. This is confirmed by 'Abdu-r Razzāk[11]:—The business of these men (police men) is to acquaint themselves with all the events and accidents......and to recover anything that is lost or that may be abstracted by theft; otherwise

[8] 315 of 1909, *A.R.E.*, 1910, part ii, para 34.

[9] 80 of 1925, *A.R.E.*, 1925, part ii, para 22—under Kulōttunga.

[10] 1348-49 A.D.—240 of 1912, *A.R.E.*, 1913, part ii, para 50.

[11] 'Abdu-r Razzāk, Elliot, *History,* IV, p. 112.

they are fined. We have also the travellers' impressions on the state of security in the country. They seem to agree that one of the means adopted for preserving security was to make punishments for offences severe: "When any one among the people is guilty of an offence one of the court ministers punishes him; if the offence is light, the culprit is tied to a wooden frame and given fifty, seventy or up to an hundred blows with a stick. Heinous crimes are punished with decapitation or by being trampled to death by an elephant."

Evidence on the state of security.

The severity of punishments is also observed by others:[12] "They put a thief to death for stealing a single nut or even a grain of seed of any fruit; hence thieves are unknown among them and, should anything fall from a tree, none, except its proper owner, would attempt to touch it." The latter part of the statement is evidently an exaggeration, but that punishments were severe seems to be substantiated by the instance given by him: One day when the king was riding with his son-in-law, the latter picked up a mango which had fallen over a garden wall. The king's eye was upon him; he was immediately ordered to be ripped open and divided asunder, the parts being exposed on each side of the way and a half of the fatal mango beside each!

Severity of punishments.

The evidence regarding the state of security can be multiplied: "There is great security in the country.

[12]Ibn Batuta (Lee), p. 167; Ibn Batuta (Defrêmery), IV, p. 102 for an illustration.

Bandits and robbers are seldom met with."[13] "Throughout the night the town of Beder is guarded by 1000 men *kutovalovies,* mounted on horses in full armour, carrying each a light."[14] "Justice is strictly administered in this city (Calicut)." "Justice is extremely well administered here."[15] "In this kingdom (Vijayanagar) you can go everywhere in safety."[15a] We are told, here very few thefts took place, for the punishments were very severe, 'for a thief, whatever theft he commits, howsoever little it be, they forthwith cut off a foot and a hand, and if his theft be a great one, he is hanged with a hook under his chin......and people of the lower orders, for whatever crime they commit, he forthwith commands to cut off their heads in the market-place, and the same for a murder unless the death was the result of a duel.'[16]

Evidence not conclusive; the sense of security.

The evidence noticed here on the state of security in the country is, however, by no means conclusive; it represents only the general impressions of the travellers; the other side they did not apparently see or take the trouble to record. They are, however, valuable as indicating that there was a general sense of security in the country in the period in which they wrote.

[13]John of Monte Corvino, Yule, *Cathay,* III, p. 64.

[14]Nikitin, Major, *India,* p. 15.

[15]Varthema, *Travels,* p. 114.

[15a]ibid., pp. 130—31.

[16]Nuniz, Sewell, *A Forgotten Empire,* pp. 381—83; See also *Tao i chih lio,* Rockhill, *Notes, T'oung Pao,* XVI, p. 454 at Calicut.

(3) AGRICULTURE, INDUSTRY AND TRADE

Agriculture—Industry—Trade.

The regulation of agriculture and industry has already been dealt with;[17] in the first, state help was twofold: encouragement of reclamation of land by concessions to peasants in taxation, until the land was able to pay and improvements had been effected, and constructing or repairing irrigation works, or financing private undertakings in the same direction. The author of the *Āmuktamālyada* lays emphasis on the latter: 'Virtue and prosperity will increase only when tanks and irrigation canals are constructed and favour is shown to the poor cultivators in the matter of taxation and services.'[18]

Agriculture.

In 1447 A.D. the ryots of Magadamaṇḍalam appear to have complained that the length of the rod for measuring the wet and dry lands for purposes of assessment was too small and Vāsudeva-Nāyakkar-Tirumalai Nāyakkar, realising that it was a hardship for the agriculturist, prescribed a new length for the rod and satisfied them.[19]

The king also received memorials from Veḷḷāḷas regarding their disabilities.[20]

The solicitude of the kings for the extension of cultivation is also proved by the remains of the old

[17] supra, ch. II, (3) ii and iii.

[18] Sarasvati, *Political Maxims*, *J.I.H.*, IV, part iii, part 68—69.

[19] *A.R.E.*, 1918, part ii, para 69, 97 of 1918—1447 A.D.

[20] 999 A.D.—256 of 1925, refers to a memorial submitted to the king by 240 Veḷḷāḷas.

irrigation works: "Many of them (tanks and irrigation works) now abandoned or in ruins evince the solicitude of those ancient monarchs for the extension of cultivation even in tracts not favoured by natural position or the quality of the soil. Almost every catchment basin, however small, still bears traces of having been bunded across, and in many instances this was done in order to secure a crop of paddy on a few acres of stony ungenerous soil, to which all the fostering care of the British administration has failed to induce cultivation to return. Large and more extensive projects also were not neglected, some of which still bear witness to the enlightenment of these Hindu kings; while the absence of scientific instruments in those remote times compels the astonishment and admiration of the beholder."[21]

Industry.

Industry also was protected by concessions in taxation. Indeed cultivators and artisans were so favoured that cultivators in the act of sowing the crops and artisans, while engaged in their own occupations, were even declared to be immune from arrest.[22]

Trade.

The regulation of trade was also one of the recognized functions of the state. Market prices were to be regulated by the king, and by such a rate the sale and purchase were to be made every day. Under such conditions, profit was "the surplus over the rate as regulated by the king", "and not one made from rates determined by their own

[21] Crole, *Chingleput*, pp. 209—10.

[22] Vijñānēśvara, *The Mitākṣarā*, ii, 5.

fancy". Trading conspiracies with a view to raise the prices were to be severely dealt with: "Although knowing the increase or decrease in the market rates as regulated by the king, if traders combine, i.e. join together and out of greed for profit maintain another price which is detrimental to the labourers or the artisans, they were to be heavily fined". It is interesting to observe that the rule finds a parallel in mediaeval England. 'In the middle ages', says Rogers, 'to regulate prices was thought to be the only safe course whenever what was sold was a necessary of life, or a necessary agent in industry'.[23] We have also rules against the falsification of weights and measures and adulteration of commodities by mixing inferior substances, and selling 'mock' articles, as for instance by giving a glossy appearance to a cotton thread and passing it off as silk thread. But the more valuable evidence for the student of economic history is lacking, viz., how they worked in practice. We have some evidence that 'local bodies levied fines on rotten drugs'.[24] The ruler also occasionally prohibited the sale of certain commodities. Thus we read of a measure against butchers: 'They had to give up their trade and received compensation to the amount of 3 years' income';[25] a Mahomedan counterpart is found in Alauddin Bahmani who prohibited the use of wine[26] by his subjects, though he used it himself.

[23] Rogers, *Six Centuries*, p. 139. cf. Vijñānēśvara, *The Mitākṣarā*, ii, 251.

[24] '*aḻugal-śarakku*,' *South Ind. Inscr.*, II, 22.

[25] Mērutunga, *Prabandhacintāmaṇi*, p. xiii.

[26] Haig, *Cambridge History*, III, p. 407.

(4) TAXATION

Introductory—A study of the documents—i. Taxes on land: (A) Share of produce taken; 1. land revenue or share of produce—The theory—The practice—2. Additional demands—(a) For maintenance of irrigation works—(b) For payments to village officers—(c) For maintenance of temples and Brahmans—The total demand on land—(B) Mode of assessment—Surveys—Unit of measurement—Principles of assessment—Exemptions—Graded assessment—Remissions—The revenue year—(C) Mode of collection: (a) relation between the state and the peasant—(b) Payment in cash and in kind—Was the land-tax heavy? ii. Excise—iii. Duties on articles of trade—iv. Professional taxes—v. Miscellaneous items.

Introductory.

The evidence for a study of taxation in the period under review lies scattered through inscriptions and travellers' accounts, but it cannot be considered sufficient for a comprehensive account; the texts of many inscriptions remain to be published and further research is necessary for the elucidation of terms, now obsolete. What is attempted here is an outline of the system, the aim being to present the broad principles of the system as seen from the available evidence rather than to attempt the explanation of details which are by no means free from obscurity.

In attempting to do this we propose to devote our attention primarily to land revenue, discussing the main heads under which it was collected and the mode of assessment and collection, treating other items of taxation more briefly towards the end.

The outstanding feature which has bewildered students of history,[27] and still bewilders us in a study

[27] Sewell, *India*, pp. 31 ff.

of these documents, is their 'formidable' list of taxes.

A study of the documents.

A perusal of one of these documents out of the many is necessary for a clear understanding of the evidence in all its bearings. An inscription of the first half of the fifteenth century[28] from Śrirangam may be taken as a representative one. The taxes accruing from the villages are enumerated as follows—

vāśal-vari, pēr-kaḍamai, taṟi-kkaḍamai, mara-kkaḍamai, śekku-kaḍamai, māvaḍai, maravaḍai, kuḷa-vaḍai, iḍatorai, pulvari, mandai-kaṇḍēṟṟam, oḷugu-nīr-pāṭṭam, uḷḷāyam, vil-paṇam, maghamai, mallāyi-maghamai, ina-vari, nāṭṭu-kāṇikkai, kaḍḍāyam, kiru-kuṭa-viśēṣam, araśupēṟu, nallerudu, nal-kiḍā, nal-paśu, palataḷi, ariśi-kāṇam, talaiyārikkam, mādārikkai, rāyasavarttanai, avasaravarttanai, kaṭṭigevarttanai, karaṇike, jōḍi, nīrāṇivari, nāṭṭukaṇakkuvari, akkasāle-vari, āḷamañji, ūḷigam, etc.

Such lists are 'formidable'; indeed in one, we have 66 items of taxation mentioned[29] and the interesting fact about them is that such lists are found under the Cōḷa,[30] Pāṇḍya[31] and Vijayanagar[32] rule, indicating that the nature and kinds of taxes levied, though not the mode of assessment and collection, remained substantially the same through the period.

[28] *Ep. Ind.*, XVIII, p. 139—1434 A.D.

[29] 1488 A.D.—249 of 1916, *A.R.E.*, 1916, part ii, para 62.

[30] *South Ind. Inscr.*, III, p. 391.

[31] 507 of 1916, *A.R.E.*, 1917, part ii, para 8 and note.

[32] *Ep. Ind.*, XVIII, p. 139.

To understand the documents, however, we should adopt some basis of classification; for, it is evident that the burden of these items of taxation did not fall on the same individual, i.e. when all the taxes of a village are enumerated, they include the share of taxation borne by all classes of people and a correct understanding of the taxation system should therefore start with a scheme of classification with a view to estimate the burden borne by the various classes of the community.

Such a classification is implicit in the inscriptions themselves. A study of a large number of such inscriptions tells us that the main revenue heads were the following:—

i. Taxes on land.
ii. Excise.
iii. Duties on articles of trade.
iv. Professional taxes.
v. Miscellaneous items.

The most important of these undoubtedly was the land tax. Deferring for the moment the mode of assessment and collection, the important questions that must be answered are two:—1 what were the taxes charged on the land, and the connected one 2 what was the total share of produce taken on the whole?

i. Taxes on land: (A) Share of produce taken; 1. land revenue or share of produce.

There is a considerable difference of opinion on the latter. While some believe that the kings did not take more than 1|6 of the gross produce as land tax, others are as honestly convinced that their

share did not at any time fall below one-third. Dr. Burnell[33] may be taken as a representative of the latter: "In S. India it (the king's dues) seems, however, to have been often a half". Srinivasa Raghavaiyangar[34] supports him, pointing out that "there is ample evidence to prove that the land tax taken, not only by the Muhammadan but also by the Hindu sovereigns was fully one-half the gross produce". Sewell asserts the same[35] of the Vijayanagar empire, basing his conclusions on later accounts of the seventeenth century. Ellis[36] more cautiously estimates that the tax was always more than the sixth or fourth permitted by the Sanskrit lawyers:[37] "a general assessment was then introduced, grounded on the share allowed by law to the sovereign in landed produce one-sixth; this has since, by successive additions, been considerably increased".

The relevant evidence in this connexion is two-fold, one of theory, the other of practice. As to theory we have the time honoured direction of Manu that the king was entitled to a share of the gross produce of the lands, a share which was usually fixed at a sixth, but which might

The theory.

[33] Burnell, *South Indian Palaeography*, p. 112, n. 3.

[34] *Memorandum*, p. 8.

[35] *India*, p. 53.

[36] *Replies*, p. 4.

[37] Hayavadana Rao, [*South Indian Finance*, *Ind. Ant.*, XL, p. 268] moderates the figures of Burnell and Ellis to 13|30. See also Smith, *India*, pp. 212—13, Caldwell, quoted in *Ind. Ant.*, XLV, p. 36. Ramaswamy, *Indian Famines*, *Ind. Ant.*, LII, p. 194: The Cōḷa, Hoysaḷa, and Pāṇḍya kings, the native dynasties of the Northern Circars and the famous kings of Vijayanagar, all of them exacted 50 per cent. of the gross produce,

on occasions rise up to a fourth or fall to a twelfth.[38] Manu's laws were old, but that the theory of it was understood in our period is shown by the claim of the Cōḷa kings of the eleventh and twelfth centuries that they "followed the laws of Manu". King Adhi Rājēndra, son of Vīra Rājēndra, 1063-1070 is said to have 'continually increased his great fame by following the Laws of Manu'.[39] A century later we hear the statement that "the rules of Manu flourished".[40] The Pāṇḍya kings also claim that they "enforced the Laws of Manu".[41] Mādhavācārya's advice is illustrative of the Vijayanagar period : 'As the florist in the garden plucks blossoms successively put forth and does not eradicate the flowering shrub, so should the king, drawing revenue from his subjects, take the sixth part of the actual produce: but the maker of charcoal extirpating the tree burns the whole plant, let not the king so treat his subjects'.[42]

It is, however, too much to suppose that Manu or any other author's collection of legal maxims especially in matters of government was in force as statute law as in modern states. Their importance is not that they had authority as practical statute books, at any rate in the realm of public or constitutional law, but because the books of a time must more or less reflect the ideas

[38] Manu, *Dharma Śāstra*, (Text), ch. vii, 130—31.

[39] *South Ind. Inscr.*, III, 30.

[40] ibid., 85.

[41] *Ind. Ant.*, XXII, pp. 72—74, *Arch. Surv. Southern India*, IV, p. 53.

[42] Mādhavācārya, *Parāśara-Mādhava*, I, 403.

of the people, and because, of course, a pious Hindu prince would to some extent allow the value, as guides, of books written by sages or doctors of his semi-sacred law.

The practice.

We now turn to the evidence as to the practice on the subject.[43] Here, it must be said, Tamil inscriptions are particularly useful to us, as containing many details not available elsewhere. We have many such, which specify *kaḍamai* or land revenue. They fall into two kinds:—

i. Those which give the amount of produce claimed by the government on a unit of land.

ii. Those which state the share or proportion of produce demanded.

Of the former we may cite the few which are available:—[44]

[43] One cannot but regret that there is not more clear evidence available on such an important matter; if there were, it might be possible to group them by time for each locality. It may be hoped that with the publication of the texts of all the inscriptions unearthed, we might be in a better position in this regard.

[44] *South Ind. Inscr.*, II, 4, 147 of 1927, *Trav. Arch. Series*, III, 18, 234 of 1927—*A.R.E.*, part ii, para 26, *Inscriptions of the Pudukkōṭṭai State*, 265, 39 of 1924—*A.R.E.*, 1924, part ii, para 38, 59 of 1914, *A.R.E.*, 1915, part ii, para 44, 59 of 1914, *A.R.E.*, 1915, part ii, para 44, 247 of 1916, *A.R.E.*, 1916, part ii, para 64, 409 of 1914, *A.R.E.*, 1915, part ii, para 34, 587 and 588 of 1915, *A.R.E.*, 1916, part ii, para 27, *Inscriptions of the Pudukkōṭṭai State*, 257.

Date	District	Description of crop or land	Unit of land as mentioned in inscription	Tax	Tax on each *vēli*
1011 A.D. ..	Tanjore ..	paddy ..	*vēli* ..	100 *kalam* ..	100 *kalam* .
1063 A.D. ..	„ ..	„ ..	„ ..	10 „ ..	10 „ ..
1124 A.D. ..	Travancore ..	„ ..	13 *mā* ..	7 *kalam*+1 *kāśu*.	10 10|13 *kalam* ..
1178 A.D. ..	Tanjore ..	„ ..	*vēli* ..	60 *kalam* ..	60 *kalam* ..
1222 A.D. ..	Pudukkōṭṭai ..	paddy (winter) crop ..	*mā* ..	2 *kalam*+¼ *tiram*.	40 *kalam* +5 *tiram* ..
„ ..	„ ..	sugar cane ..	„ ..	2 *kalam*+¼ *tiram*.	„ „ ..
„ ..	„ ..	paddy: *kuṟuvai* ..	„ ..	1 *kalam*+⅛ *tiramam* ..	20 *kalam* + 2½ *tiramam*.
„ ..	„ ..	sesamum ..	„ ..	1 *tūṇi* and 1 *padakku* and 1|16 *tiramam*..	10 *kalam* + 1¼ *tiramam* ..
„ ..	„ ..	*tinai* ..	„ ..	„ ..	10 *kalam* ..
„ ..	„ ..	*varagu* ..	„ ..	„ ..	„ „ ..
1325 A.D. .	Ramnad ..	paddy ..	*mā* ..	3 *kalam* ..	60 „ ..
„ ..	„ ..	„ *kuṟuv-ai* in *Aṟpaśi* ..	*mā* yielding 40 *kalam* ..	2¼ „ ..	45 „ ..
„ ..	„ ..	„ *kuṟuv-ai* in *Aḍi* ..	*mā* ..	1½ „ ..	30 „ ..
„ ..	„ ..	lands growing *varagu*.	*mā* ..	1½ „ ..	30 „ ..
„ ..	„ ..	lands yielding sesamum ..	*mā* ..	¾ „ ..	15 „ ..
„ ..	„ ..	lands yielding *tinai* ..	*mā* ..	¾ „ ..	15 „ ..
1429 A.D. ..	Tanjore ..	paddy ..	*vēli* ..	50 *kalam*+¼ *paṇam* ..	50 „ ..
„ ..	„ ..	uncultivated waste brought under cultivation of paddy ..	*vēli* ..	40 *kalam* ..	40 *kalam* ..
„ ..	„ ..	forest reclaimed paddy.	„ ..	20 „ ..	20 „ ..
„ ..	„ ..	*kadaippu* lands and lands irrigated by baling water-paddy .	„ ..	20 „ ..	20 „ ..
1504 A.D. ..	S. Arcot ..	wet land ..	*mā* ..	20 *paṇam* ..	400 *paṇam* ..
		dry land ..	*mā* ..	15 „ ..	300 „ ..

Undated inscriptions—

King	District	Crop	Unit	Tax	Tax *vēli*
Sundara Pāṇḍya.	Ramnad ..	paddy ..	*mā* ..	3 *kalam* ..	60 *kalam* ..
Māṛavarman Vikrama Pāṇḍya ..	Tinnevelly ..	„ ..	*mā* ..	7 „ ..	
		paddy *kuṟuvai* ..	„ ..	5¼ „ ..	
		paddy: sown in *tulā* ..	„ ..	3½ „ ..	
		gingelli ..	16 *mā* ..	1 *diramam* ..	
		varagu ..	16 *mā* ..	1 „ ..	
		tinai ..	16 *mā* ..	1 „ ..	
		dry crops ..	1 *mā* .	½ „ ..	
Sundara-Pāṇḍya-dēva, 5th year.	Pudukkōṭṭāi ..	paddy winter ..	„ ..	2 *kalam* ..	40 *kalam* ..
„ ..	„ ..	paddy (*kuṟuvai*) ..	„ ..	1 „ ..	20 „ ..
„ ..	„ ..	*tinai* ..	„ ..	½ „ ..	10 „ ..
„ ..	„ ..	*varagu* ..	„ ..	½ „ ..	10 „ ..
	„ ..	sesamum ..	„ ..	½ „ ..	10 „ ..

One piece of information which the above mentioned statistics yield us is that there was a differential rate for crops, the difference being according to the nature of the crop and the season of cultivation, e.g. *kuṟuvai* paid only one half of the winter paddy, or *kuṟuvai* paid $\frac{3}{4}$, and *tulā* one-half; and *tinai, varagu* and sesamum seem to have paid one-fourth of the winter paddy rate.

But the value of this class of inscriptions to enable us to determine the system of taxation in practice is very much lessened by the fact that they do not give us the quality of land or the total yield of land, and as such they are of little use to us, as is clear from the first two which vary so widely in assessment as 10·1.

The other group which gives us the rates is more useful to us. Two of these may be cited. An inscription of 1325 A.D.[45] tells us that the *kaḍamai* was to be paid in paddy at the rate of 3 *kalam* per *mā* of land yielding 40 *kalam,* i.e. 3|40. This rate seems, however, too favourable to the peasant, and must be treated as an exceptional case. The other[46] says, "the riches *collected* as the sixth share (of the produce) of the earth, he had measured out." And this is corroborated by a two-fold evidence. First the manual of administration which Mādhavācārya wrote for the Vijayanagar Empire contains the statement that $\frac{1}{6}$ of the

[45] 39 of 1924, *A.R.E.*, 1924, part ii, para 38.

[46] *South Ind. Inscr.*, III, 57, line 6.

produce was to go to the ruler,[47] and the evidence[48] that this continued for two centuries and a half is supplied by Munro who had exceptional opportunities to study the system from the curnums' books:[49] "The demand of the Sirkar was fixed for two centuries and a half under the Vijayanagar government".

2. Additional demands.

So far the theory of one-sixth seems to have been followed in practice, but there were certain additional demands on land which have to be taken into account for a correct estimate of the share borne by the land, which made the land tax more than the theoretical one-sixth. There are a number of items said to have been collected besides the *kaḍamai* from land; they were not uniform over the whole country or through the whole period; what can at best be said is that a large number of inscriptions of different dates and places mention them.[50]

We may divide them under three heads:—

(a) For maintenance of irrigation works.

(a) Taxes on land for the maintenance of irrigation works: *kaṭṭe, kāluve, kere, nīr-nilakkāśu, nīrkūli.*

[47]Wilks, *Historical Sketches*, I, p. 95.

[48]Munro, *Minutes*, I, p. 63.

[49]supra, pp. 13—14.

[50]324 of 1911, *A.R.E.*, 1912, part ii, para 49, 226 of 1912, *A.R.E.*, 1913, part ii, para 54, 74 of 1913, *A.R.E.*, 1913, part ii, para 72, 99 of 1915, *A.R.E.*, 1915, part ii, para 22, 171 of 1915, *A.R.E.*, 1916, part ii, para 10, 507 of 1916, *A.R.E.*, 1917, part ii, para 8, and note, 510 of 1921, *A.R.E.*, 1922, part ii, para 23, 194 of 1923, *South Ind. Inscr.*, I, 61, 64, 78, *South Ind. Inscr.*, II, 61, 92, *South Ind. Inscr.*, III, 151, 205, [6th year Rājēndra-Cōḷa I], *Ep. Ind.*, XVIII, p. 139.

(b) Taxes on land to support village officers:—*arimukkai, eṭuttukkoṭṭi, kaṅkāṇi, kaṇakkavari, nāḍukkāval, paṭṭōlakāśu, pāḍikkāval, (kāvalpperu), nirūpachchambaḍam, talaiyārikkam, taṇḍalirkkaḍamai, veṭṭitaniyāḷ, veṭṭippuḍavai.*

(b) For payments to village officers.

(c) For maintenance of temples, Brahmans, etc.—*kārttigai ariśi, kārttigai kāśu, kārttigai-ppaccai, magamai, ubhaiyam, ājiva-kāśu.*[51]

(c) For maintenance of temples and Brahmans.

One characteristic is common to these three: the proceeds of these were not likely to reach the central government. They were demands on the land, collected on the authority of the government but utilized for maintaining irrigation works, for the payment of village officers, and for the maintenance of the temples.

In connexion with payments to village officers, it may be noted that their collection was for a long time left to the village officers themselves. It is a significant fact that Mādhavacārya's manual, while laying down regulations for the collection of land revenue (proper) and dues for the maintenance of temples and Brahmans, is silent about the dues for the payment of village officers; indeed we have evidence that in some districts the system whereby payments to village officers were made directly to them continued even as late as 1824 A.D.[52]

[51] See Note D.

[52] Hemingway, *Trichinopoly*, p. 240; one inscription, (*South Ind. Inscr.*, II, p. 117), suggests that in *some* villages, even these were collected by Government.

The tax for the maintenance of temples and Brahmans seems a little queer, but we may recollect that such taxes were not peculiar to South India. In the middle ages the maintenance of religious houses seems to have been considered a normal duty of society and hence a tax for their maintenance a justifiable charge on their income. In the west tithes on land are a familiar feature in the system of taxation in the same period. About their collection, however, we would fain have more precise information. We can only say that from the fourteenth century according to Madhavācārya's statement they were collected by the king on the pretext that he was supporting Brahmans and temples and this perhaps explains the liberality of kings in free gifts of land and exemptions from taxes to Brahmans and temples —a familiar feature to students of the epigraphy of the period.

The amount of these three heads of demand on land cannot be fixed with certainty. If the instructions of Mādhavācārya had some relation to the practice obtaining in the country, the third may have amounted to 1|12; and the payment to the village officers was extra. An inscription of Vīrarājēndra 1063-1070 A.D. suggests that the internal revenues, the *antarāya,* was commuted to 1|10 of the gross produce paid in cash.[53] We cannot say whether the *antarāya* referred to here included the payments to the temples and Brahmans, as

[53] *South Ind. Inscr.*, III, 117. The internal revenues were collected at the rate of 25 *kāśu* per 1000 *kalam* of paddy. A *kāśu* according to the inscriptions of the time bought 4 *kalam* of paddy. Thus for every thousand *kalam*, the Government collection was one hundred *kalam*, i.e., 1|10 which was paid in cash.

well as village officers, or only the latter. At any rate, it seems clear that the land revenue included besides one-sixth, other charges which at the lowest must have come to 1|12 according to Mādhavācārya or 1|10 according to the inscription, i.e., 1|6+1|12=1|4 or 15|60, 1|6+1|10=8|30 or 16|60.

The total demand on land.

This estimate receives corroboration from the evidence of Sir Thomas Munro, who, it has been noted, had access to the original records viz. the account books of the *Curnums.* Munro prepared the abstract of a series of records of land assessment commencing with "the era of one formed by Hurry Roy, a Rajah of the Bijnugger dynasty, between the years 1334 and 1347, and terminating with the reign of Tippo Sahib", thus tracing the several changes which it had undergone, for a peroid of 400 years.

It appears, from the intelligent and able report of that officer, that the public tax on the land, which was assessed at fixed money rates, with reference to the quantity of rice equal to the quantity supposed to be necessary to sow it, remained fixed for two centuries and a half, under the Vijayanagar Government, and amounted to less than a fourth of gross produce.[54]

The mode of assessment adopted by the Cōḷas is disclosed to us by inscriptions: "The village of Iṟaiyānśēri........ (contains) according to measurement, twelve measures of land, one half, two-twentieth, one-fortieth and one three-hundred-and-twentieth; 1|320 of

(B) Mode of assessment.

[54] *The Fifth Report,* II, p. 79.

one quarter and three eightieths; and $(1/320)^2$ of three quarters and one twentieth. There have to be deducted three quarters (of a measure) of land free from taxes, two twentieths, one eightieth and one hundred-and-sixtieth; 1/320 of one half and three twentieths; $(1/320)^2$ of three twentieths, one hundred-and-sixtieth and one three-hundred-and-twentieth; $(1/320)^3$ of three eightieths; and $(1/320)^4$ of three quarters and one twentieth,—consisting of the village site, the site of the houses,........the *Paṟaiccēri,* the water-course called kaṇṇan channel, and the other channels which pass through this village and irrigate other villages, the village thrashing-floor of this village, the ponds of this village and their banks, the sacred temple of Mādēvar in this village and its sacred court, and the sacred bathing-pond of the god. There remain eleven measures of land, three quarters and one hundred-and-sixtieth; 1/320 of one half, two twentieths and three eightieths; $(1/320)^2$ of one half, two twentieths and three eightieths; $(1/320)^3$ of three quarters, four twentieths, one hundred-and-sixtieth and one three-hundred-and-twentieth; and $(1/320)^4$ of four twentieths. The revenue paid as tax is one thousand one hundred and sixty nine *kalam,* two *tūṇi,* two *nāḻi,* and one *uri* of paddy, which has to be measured by the *marakkāl* called *Āḍavallān,* which is equal to a *rāja-kēsari.*"[55]

[55] *South Ind. Inscr.,* II, p. 62.

A perusal of this and other inscriptions[56] shows that the Cōḷas carried out regular surveys; and evidence suggests that the Vijayanagar kings continued the practice.[57] Temporary settlement was the rule, as many inscriptions register fresh settlements on certain lands.[58] The unit of length for measuring lands apparently varied in different localities. It was severally termed *mānadaṇḍa, Rāja-Vibhāṭan-kōl drōhamalla* rod, etc.[59] Its length also varied:[60]

Surveys.

Unit of measurement.

18 spans, a span=12 fingers—	1072 Kōlār
20 feet	1447 A.D.
34 feet	1504 S. Arcot

Land was also classified according to the quality of soil......we find references to 8 classes of land and

[56] 17th year of Rājarāja I; 59 of 1913; 285 of 1917, *A.R.E.*, 1918, part ii, para 25.

16th year of Kulōttunga I; 466 of 1905, 55 of 1906, 44 of 1907, 305 of 1907 and 482 of 1907.

38th year of Kulōttunga I; 272 of 1907, 275 of 1907, 188 of 1908.

6th year of Vikrama Cōḷa, 87 of 1900.

[57] Ellis, *Tenures, Ind. Ant.*, XV, pp. 269—70. It was found by a careful examination of the oldest accounts procurable that the system of assessment in force under the Bijapur and early Marāṭha Governments was derived from the times of the Anagundī or Bijanagar Kings. According to the tradition, Kṛṣṇa Rāya, the greatest prince of that line, made a regular survey of the whole area on which assessment was due.

[58] 3 of 1899, 81 of 1905.

[59] Rice, *Mysore*, I, p. 577, 83 of 1912, *A.R.E.*, 1912, part ii, para 45.

[60] *Ep. Car.*, X, Mulbāgal 49 (a), 97 of 1918, *A.R.E.*, 1918, part ii, para 69.

land 'under class twelve'.[61] The assessment was fixed according to the yield of land,[62] the sowing capacity,[63] the kind of crop grown[64] and facilities for irrigation. The assessment was fixed after considering all these factors either by laying down so many measures per unit of land measured, irrespective of the actual yield or so many measures on the actual total yield of land e.g. an inscription has 3 *kalam* on every *mā,* but adds that each *mā* should yield 40 *kalam* in order to be assessed at that rate.[65] The difference between the two is obvious: in both the Government share was fixed on an estimate of the probable yield; in the former, however, the share had generally to be paid irrespective of the total yield; in the latter, the rate could be reduced if the total yield was less.

Principles of assessment.

One or two other principles followed in the method of assessment may be noted. First, in reckoning the total land which could be assessed, some deductions were made. Broadly stated, only the cultivable land was assessed, the village site, the quarters occupied by the lower classes, and artisans, the courtyard and flower gardens attached to temples, the threshing floor, the village grazing ground, the saline earth, the land just on the bed of a river, the land where breaches had

Exemptions.

61 262 of 1913, 207 of 1919, *South Ind. Inscr.*, III, 86.

62 151 of 1925.

63 *The Fifth Report*, II, p. 79.

64 587 and 588 of 1915, *A.R.E.*, 1916, part ii, para 27, supra, p. 4. *Inscriptions of the Pudukkōṭṭai State*, 116, 305.

65 39 of 1924, *A.R.E.*, 1924, part ii, para 38.

occurred and marshy places being excluded.[66] Those that had suffered damage or had failed altogether were also excluded.[67]

Graded assessment.

Another principle was a graded assessment on lands newly taken up for cultivation, the object being of course to encourage reclamation of lands. The practice varied. Lands were exempted from paying any tax for the first one year,[68] three years,[69] four years,[70] six years[71] or twelve years,[72] or paid half in the first year, ¾ in the second year[73] and so on.

Remissions.

Once fixed, moreover, the assessment was not unalterable. It appears that local bodies could make representations. We are told[74] the *adhikārin* "convened a general meeting of the great assembly of Uttama-śōḻa-caturvēdi-mangalam in the hall called Rājarājan, and after giving a patient hearing to the representation made by the village assembly, that the original survey and classification of the village lands was in a chaotic condition, reclassified these lots (and) reassessed them properly". It was open to the royal authorities not to pay heed to

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[66] *South Ind. Inscr.*, II, p. 19,

[67] 409 of 1914, *A.R.E.*, 1915, part ii, para 34.

[68] 307 of 1921.

[69] 120 of 1921.

[70] 318 of 1908, *A.R.E.*, 1909, part ii, para 23.

[71] 380 of 1925.

[72] *Ep. Car.*, V, Bēlūr 175.

[73] 422 of 1912, *A.R.E.*, 1913, part ii, para 52.

[74] 239 of 1922, *A.R.E.*, 1923, part ii, para 17.

the representations made,[75] but the large number of remissions recorded, owing to a variety of causes, shows us that such representations were not without value.[76] Some such causes were, scarcity of water,[77] flood,[78] plunder,[79] 'the ruined condition of the village',[80] desertion of land by peasants,[81] being filled up with sand owing to the vicinity of the sea[82] and ceremonial occasions like the king's coronation.[83]

Indeed, in one instance, we are told that "*in seasons of drought and consequent failure of crops, the members of the sabhā and the people of the village shall inspect the lands and ascertain which have failed and which have not*,[84] and only one-fifth of the normal dues was to be levied; and if the members of the *sabhā* and the inhabitants agree among themselves and pray in common for a postponement of the payment as the only course open to a majority among them, the demand ......(one-fifth drought rate) shall be apportioned over all the lands paying tax to government (to be levied in the subsequent harvest) but without interest

[75] 30 of 1927.

[76] Hayavadana Rao [*South Indian Finance*, *Ind. Ant.*, XL, pp. 268, 287], accepts uncritically Dr. Hultzsch's rather sweeping conclusion (*A.R.E.*, 1900 para 24), about remissions: "It thus appears that remission of assessment was unknown in those times even if the destruction of crops was due to causes beyond human control".

[77] 230 of 1901.

[78] *Inscriptions of the Pudukkōṭṭai State*, 625, 638.

[79] 629 of 1920.

[80] 548 of 1915.

[81] 110 of 1922.

[82] 289 of 1913.

[83] 80 of 1905.

[84] *Ind. Ant.*, XXIV, pp. 308—11; italics are mine.

and *paṭṭāri,* the rent roll of the year being scored out.''[85] An interesting confirmation of this is found also in Mērutunga.[86] We are told that once the rains having been checked by a drought the people of the country were unable to render to the king the share of the produce to him and so they were brought to Paṭṭaṇa by officers employed by him and their presence was notified to him. The prince Mūlarāja saw all the people being harassed by the king's officers in connection with the king's share that was to be deducted from the grain. Filled with compassion, the prince requested the king that the heads of families might be relieved from the payment of the king's share. The king said, 'so be it'.

The next year as the corn grew up successfully, thanks to the rain, the cultivators offered to pay the share due to the king for 2 years. The king refused to receive it. The court of elders made the king take his share of the previous year[87] and that year.

It is an interesting fact that relief in taxation was sometimes given not only by changing the amount or rate of assessment but by changing the unit of measurement, or the unit of currency. In an inscription of 1447 A.D.[88] we read, "From early times up to date lands in the Magadaimaṇḍalam were measured by a rod 18 ft. in length and assessed.........it was thought that if two feet more were added to the old measuring rod, the tax would become easy of payment

[85] *Ind. Ant.*, XXIV, pp. 308—11.

[86] Mērutunga, *Prabandhacintāmaṇi*, p. 77.

[87] Mērutunga, *Prabandhacintāmaṇi*, p. 78.

[88] 97 of 1918, *A.R.E.*, 1918, part ii, para 69,

and the cultivators would be in a flourishing condition. ......On this representation it was ordered that the length of the measuring rod should thereafter be fixed at 20 feet, by increasing the length of the old rod by two feet; that the lands, both wet and dry, should be measured out again by the new rod." An instance of a change in the value of currency for lightening the burden is furnished by an inscription of Māṟavarman alias Tribhuvanacakravartin Sundara-Pāṇḍyadēva:[89] 'The value of *tiraman* (drachma) was increased from 5 *mā* to 7 *mā* of *kāsu*'.

The revenue year.

The revenue year is said to have begun in January–February[90] or February–March;[91] the revenue seems to have been collected, generally in two instalments, *kanni* and *kumbham*;[92] when the due quantity was measured a receipt was granted discharging the liability, but when a part of the tax was paid and part was still due, a list was prepared showing the arrears for a whole year, and an *ancal* or authorization taken in writing to realize the same, and the arrears recovered accordingly.

In some districts, however, three instalments were the practice;[93] if the village revenues had been granted as a gift, the grantee could apparently collect it as he liked; in one instance,[94] the peasant was asked to pay the revenue to the grantee in monthly instalments.

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[89] 73 of 1924, *A.R.E.*, 1924, part ii, para 31.
[90] *Tai, South Ind. Inscr.*, V, 305.
[91] *Kumbha—Trav. Arch. Series*, V, p. 181—XI century.
[92] *Ind. Ant.*, XXIV, pp. 308—11: *arakkal* and *cāral.*
[93] Mukkandāya, *Ep. Car.*, V, Arsikere 67—1336 A.D.
[94] 232 of 1924.

(C) Mode of collection: (a) relation between the state and the peasant.

Under 'mode of collection' we have to discuss two main points: i. the relation between the state and the peasant; ii. payment in cash and in kind.

Regarding the first, the question arises whether the revenue was collected from the peasant *directly* by the state through its own officials, or *indirectly* through intermediaries. Our evidence suggests that both methods were existing side by side. Where some elements of joint-tenure existed, it would appear that the state did not deal directly with the individual peasant, but dealt with a group—the peasants of the village as a whole. We have seen in an inscription of Rājādhirāja-dēva how the *adhikārin* convened a general meeting of the great assembly of Uttamasōḷa-caturvēdimangalam, and after giving a patient hearing to the representations made by the village assembly that the original survey and classification of the village lands was in a chaotic condition, he classified these lots and reassessed them properly. In such villages, the assembly was also given ample power to deal with the defaulters. The king gave them[95] the power to sell the holdings of those who had not paid their revenue, and accordingly the lands of some Brahmans were sold, because, being unable to pay the taxes, they had resigned their lands and left the village.

In those lands, however, where joint tenure did not prevail, the state appears to have dealt with the headman of the village, who apportioned the demand among the several land holders of the village. This difference

[95] 620 of 1909, *A.R.E.*, 1910, part ii, para 24, *South Ind. Inscr.*, III, 9.

seems to be what is indicated by the phrase *veḷḷān-vagai* noticed in the Tiruvālangāḍu plates.[96]

In addition to these, there is no doubt that two more systems were prevailing. The large number of grants of revenue to institutions and individuals implies that the state here allowed the grantee to deal directly with the peasant; indeed, he was expected to do it himself and make his own arrangements for the collection of revenue. The ruler, on his part, commanded the inhabitants to pay the grantee what they were paying to him till the time of the grant. There were others who may more appropriately be called assignees for they were those who were granted the revenues of villages for fulfilling some definite service.[97] Under this head come those officers who were paid their salaries by grant of land.

There was also the practice of farming, the idea being that the state could be rid of the difficulty of collecting the dues from the tax-payer direct, leaving it to the farmer to collect them and remit a fixed amount to the treasury. The mention of Jagir,[98] the fief or *nāyakatana*,[99] the *nāyankaram*[100] seems to point to the development of the 'farmer' where a district or extent of territory was handed over to the chief who did the revenue administration in his own way, and remitted a proportion, fixed previously, to the state.

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[96] *South Ind. Inscr.*, III, p. 402. III Tamil Text, line 19.

[97] supra, ch. II, sect. (2) iii.

[98] 96 of 1913—Śaka 1434.

[99] Śaka 1458—99 of 1913.

[100] 131 of 1917—Śaka 1236.

Occasionally the systems of assignment and farming were combined i.e. payment of salary for service done by means of grants of revenue combined with the collection of revenue in the district on behalf of the state. The best example of such a combination is supplied by the system prevailing in Vijayanagar: "He has so many and such great lords in his kingdom, who, the greater part of them, have themselves revenues ......these captains whom he has over these troops of his are the nobles of his kingdom; they are lords, and they hold the city, and the towns and villages of the kingdom; there are captains amongst them who have a revenue of a million and a million and a half of *pardaos,* others a hundred thousand *pardaos,* others two hundred, three hundred or five hundred thousand *pardaos,* and as each one has revenue so the king fixes for him the number of troops he must maintain in foot, horse and elephants........ Each of these captains labours to turn out the best troops he can get because he pays them their salaries.......Besides maintaining these troops, each captain has to make his annual payments to the king."[101]

The king was paid all the rents that he received from his kingdom in the month of September...... "from his hand the captains hold it (the land). They make it over to the husband men......only the captains are put to charges on account of the troops for whom the king makes them responsible, and whom they are obliged to provide in the way of service."[102]

[101]Paes, Sewell, op. cit., pp. 280—81.

[102]Nuniz, Sewell, op. cit., p. 379.

"In this way the kingdom of Bisnaga is divided between more than two hundred captains......and according to the lands and revenues that they have, so the king settles for them the forces that they are compelled to keep up, and how much revenue they have to pay him every month during the first nine days of the month of September......if they do not pay they are well punished, and are ruined and their property taken away".[103]

When such systems of collection through intermediaries first developed, we cannot trace with clearness from available evidence. We can say that the system of grants and assignments is found in the earliest records of our period, and, indeed, earlier; the farming system is, so far as we can trace, first mentioned in the year 1314 when the term *nāyankara* is mentioned.[104]

(b) Payment in cash and in kind.

There was also no uniformity with regard to the payment of the Government share in kind or in money. A combination of both was the general rule. The terms '*pon-mudal*' and '*nel-mudal*',[105] '*kāśāyam*',[106] and '*nellāyam*' point to this fact. It can, however, be said that the main share of land revenue on wet lands indicated by the term *kaḍamai* was in the tenth and eleventh centuries paid generally in kind[107] while the

103 Nuniz, Sewell, *A Forgotten Empire*, p. 389.

104 131 of 1917.

105 *Ep. Ind.*, III, p. 73, line 7.

106 *Ind. Ant.*, XXIV, p. 254. *Ep. Car.*, I, 3.

107 Exceptions do occur, e.g. 36 of 1913, 246 of 1916, *A.R.E.*, 1916, part ii, para 66.

other dues on the same land indicated by the term '*antarāya*' were generally paid in cash.[108]

With the fourteenth century, however, the practice became more universal of paying the revenue on wet lands also in cash. This at any rate is the meaning of Mādhavācārya's desire to convert the share of Government from a grain to a money payment; and he "established fixed rules for the conversion founded on the quantity of land, the requisite seeds, the average increase and the value of the grain";[109] and we are further informed that the rate at which grain was converted into money in the payment of revenue in Canara was 30 seers for a rupee. A stage seems, however, to have intervened some time before the middle of the fourteenth century when the revenue was payable either in kind or in cash.[110] The transitional stage must doubtless have caused some inconvenience, for we find that in one instance a certain tax was to be raised only in kind and not in money and that it was decided to dispense with the money payment and obtain payment only in kind so that the practice might be in conformity with ancient regulations.[111]

Mādhavācārya only systematized a practice which was growing up in the country of paying land revenue in cash; at any rate we can say that the practice in the

[108]422 of 1912, *A.R.E.*, 1913, part ii, para 52, 337 of 1923, 73 of 1924, *A.R.E.*, 1924, part ii, para 31, *South Ind. Inscr.*, III, 57, 73.

[109]Wilks, *Historical Sketches*, pp. 94—98, 126.

[110]Munro, *Minutes*, I, p. 63.

[111]259 of 1917—1414 A.D.

fourteenth and fifteenth centuries was, in general, to pay it in cash. Later inscriptions[112] testify to this.

The dry grain was generally assessed at a fixed money rent.[113] The *nuñjah* lands depended on copious irrigation and the fall of the rains being uncertain, the produce was necessarily rendered precarious also; and this may be considered to be the cause of the practice having continued, of the government share being taken in kind. The *puñjah* culture requiring only partial supplies of water was not so frequently exposed to failure; and the risk incurred by the peasant in engaging for a rent in specie was consequently less, while the varieties of produce cultivated on the same ground ripening at different periods of the year, opposed a great obstacle to a division of the crops.[114]

This seems to be the *raison d'etre* for the continuance of the system. It is difficult to agree with Sir Thomas Munro, when he says,[115] 'it was because the assessment was not moderate, that assessments in kind were introduced or continued'. The acceptance of this proposition would mean that at least comparatively the taxation in Vijayanagar times was less than under Cōḷa times, a proposition which does not seem to be warranted by contemporary evidence. The reasons suggested above seem more to the point.[115a]

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[112] 1482 A.D.—*Ep. Ind.*, III, p. 73; 1513 A.D,—246 of 1916, *A.R.E.*, 1916, part ii, para 66.

[113] 59 of 1914, *A.R.E.*, 1915, part ii, para 44.

[114] cf. *The Fifth Report*, II, p. 59, Munro, *Minutes*, I, pp. 246—47.

[115] Munro, *Minutes*, I, p. 247. Hayavadana Rao [*South Indian Finance*, *Ind. Ant.*, XL, p. 267.] quotes these statements with approval.

[115a] See also the *Fifth Report*, II, p. 59,

We have dealt with the rate, the mode of assessment and the method of collection of land revenue. The question may be asked, was the taxation on the whole heavy? or light? Obviously no final word is possible on the subject. We have occasional references[116] to people leaving the villages on account of oppressive taxation; the people of two villages were very much impoverished by the taxes they had to pay and began to feel that life in the woods would be preferable and owing to the inability of the people to pay the revenue according to the old rates, the standard of land measure was changed. We have also independent evidence from travellers that the taxes and imposts were too numerous and heavy,[117] that the ryots had many exactions to pay[118] and that they felt themselves oppressed.[119] On such occasions loud protests were heard;[120] the people met and drew up a list of what they considered to be the legitimate taxes; the authorities, too, paid some heed to these representations, for they reduced the tax or altered the land measure or remitted the taxes consequent on such representation or protests.[121] These only illustrate the truth that whatever might be the intentions of a code[122] or of a settlement, their practical

Was the land-tax heavy?

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[116] 497 of 1909, 73 of 1924, 91 of 1924,—*A.R.E.*, 1924, part ii, para 31, 234 of 1927, *A.R.E.*, 1927, part ii, para 26.

[117] Chau Ju-Kua, *Chu-fan-chi*, p. 95.

[118] John of Montecorvino, Yule, *Cathay*, III, p. 64.

[119] Nuniz, Sewell, *A Forgotten Empire*, p. 379.

[120] 59 of 1914, *A.R.E.*, 1915, part ii, para 44, 97 of 1918, *A.R.E.*, 1918, part ii, para 69, *Ep. Car.*, III, Seringapatam 6.

[121] supra, pp. 687—90.

[122] supra, pp. 674—5.

effect on the people depended largely on the circumstances of the moment, not the least important being the nature of the officers employed to collect taxes from the people.

The other taxes raised were excise, duties on articles of trade and professional taxes.

ii. Excise.
iii. Duties on articles of trade.

Excise duties are found to have been levied on toddy, salt and iron,[123] The duties on articles of trade appear to have been classified under three heads[124]:—duties on goods imported to be sold at one place were called *sthalādāyam;* those taken from goods in transit through a district were called *mārgādāyam;* those taken from goods exported to foreign countries were called *māmūlādāyam.*[125] The last belongs more to the province of customs.[126] The first two may together be termed tolls. Inscriptions specify[127] the different kinds of articles on which tolls were charged including slaves, oxen, buffaloes, grain, cloths, drugs, eggs, cotton, grass, firewood, vegetables, and fruits. They also specify rates, the pack oxen, e.g., paying a duty equivalent to 3½d. at the gates of Vijayanagar.[128] The right of collection was apparently

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[123] *Ep. Ind.*, V, p. 53, 221 of 1905.

[124] Rice, *Mysore*, I, p. 583.

[125] Another classification was into *hejjunka* or *perjjunka* or *peruśunka* duties on important articles of trade and *kirukulaśunka*—duties on miscellaneous articles in which the transactions were small—*Ep. Car.*, VII, Shikārpur 297, 144 of 1913 etc.

[126] supra, p. 659.

[127] *Ep. Car.*, VIII, Sorab 237, *Ep. Car.*, V, Bēlūr 75, *Ep. Car.*, III, Maḷavaḷḷi 95, *Nellore Inscriptions*, III, Ongole 132, 213 of 1918.

[128] Nuniz, Sewell, *A Forgotten Empire*, p. 366.

leased out and hence the rates must have been different in different places, even on the same kinds of goods. Indeed, as shown elsewhere,[129] the rate and method of collection of tolls varied enormously. We can only say that tolls formed an important source of revenue. The city of Nagallapor, through the gates of which nothing could enter—'men, women as well as head loads and merchandise'—without paying a duty brought to the treasury 42,000 *pardaos*;[130] the officials in charge of these were variously called Sumkādhikāra, the perjjunkada kaṇikāṛa etc.[130a]

iv. Professional taxes.

The list of professional taxes includes taxes on weavers, goldsmiths, masons, washermen, barbers, and oilmongers.[131] Of these, we may note that i. the professional tax was singularly elaborate—as may be seen from the fact that under weavers at least four different kinds are specified—*accutaṟi, paraittaṟi, śālikattaṟi, tūcakattaṟi;* ii. the tax was often charged on the instruments used by the professional—the washing stone of the washerman, the loom of the weaver, on the *ēṇi* of the toddy drawer,[132] the looking-glasses of dancing girls, etc.; iii. professional taxes were generally annual,[133] a few alone[134] being monthly; iv. remissions were occasionally granted, specially for

[129] supra, pp. 427—28.

[130] Nuniz, Sewell, op. cit., pp. 363—64.

[130a] *Ep. Car.*, XI, Dāvaṇagere 129, 139, 141.

[131] A detailed list is given in Note E.

[132] *Ep. Car.*, VIII, Shikārpur 295.

[133] 207 of 1922—*A.R.E.*, 1922, part ii, para 45.

[134] 318 of 1909, *A.R.E.*, 1910, part ii, para 54.

the benefit of the artisan classes, in new settlements;[135] v. generally also such taxes were paid in cash, as denoted by the term *kāśāyavargam*,[136] or *kāśāyakkuḍi*.

v. Miscellaneous items.

Under miscellaneous items we may include the house tax varying from 1 *paṇam* to 2 *paṇam* or ⅛ to ¼ *kāśu*,[137] the fines[138] (*kuṟṟattaṇḍam* and *śiṟṟāyam*), the marriage tax,[139] the royalty on mines and pearls,[140] tank dues[141] and forced labour.[142] Some interesting facts about these may be noted, though they must be taken to apply only to isolated instances. The houses of the schoolmaster, the temple manager and the village watchman were exempted from the house tax;[143] the fines were not appropriated by the king but spent on charities;[144] the income from fishing tanks was spent on the improvement of tanks;[145] and forced labour was considered so valuable by rulers that they would not part with it, while they were prepared to forego other dues and rights.[146]

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135 140 of 1915, *A.R.E.*, 1916, part ii, para 66.

136 491 of 1926, *A.R.E.*, 1927, part ii, para 87. 140 of 1915, *A.R.E.*, 1916, part ii, para 66.

137 585 of 1919, 203 of 1921—*A.R.E.*, 1922, part ii, para 41, *South Ind. Inscr.*, III, p. 476; see also *Ep. Car.*, II, 333, *Ep. Car.*, X, Mulbāgal 49a.

138 521 of 1908, *Ep. Ind.*, XIII, p. 175.

139 *Ep. Car.*, V, Hassan 119.

140 Marco Polo, *Travels*, II, p. 331.

141 510 of 1921, *A.R.E.*, 1922, part ii, para 43.

142 91 of 1912, *A.R.E.*, 1912, part ii, para 55, *Ep. Car.*, VII, Shikārpur 45—1192 A.D.

143 *Ep. Car.*, X, Mulbāgal 49a.

144 *Trav. Arch. Series*, III, 49, 104 of 1913.

145 149 of 1908, 326 of 1909, 145 of 1924.

146 Śaka 1417—74 of 1913, *A.R.E.*, 1913, part ii, para 72.

(5) CURRENCY

A study of currency systems—Its value to the student of economic history—The media of exchange—The use of money—Gold currency—Silver—Specific coins considered—The *kalañju*—Pagoda—*Gadyāṇa*—The *kāśu* and the *pon*—*Paṇam*—*Niṣka*—Subsidiary coins—*Hoṇa*—*Kāṇam*—*Māḍai*—*Pardao*—*Kāti*—*Paṇam*—*Akkam*—Foreign currency—*Boddika*—*Dirhem*—*Cruzado*—*Dinār*—*Mark*—*Florin*—*Larin*—*Livre Tournois*—*Tael*—Fluctuations in value—Assaying and weighing—Money-changers—Administrative aspect—Transmission of currency.

A study of currency systems.

We now turn to currency. To the student of economic history some acquaintance with the chief media of exchange and their value is essential if he is to understand the conditions of internal trade, prices and the standard of life in the country. It will also help one incidentally to express in terms of modern currency the prices of commodities exported for foreign consumption and to compare them with modern prices where statistics are available.

Its value to the student of economic history.

We do not need, however, to go into the technique of coinage—the shape of coins, the prevalence of the punch, and the origin of the matrix or die, the relation of coinage to the metrical system etc.; that is, in the main, the work of the specialist in numismatics. To the student of economic history, what really matters is the kind of coins in circulation, and their value in terms of modern currency, wherever it can be ascertained. This means, in essence, that it is necessary to know the average metal content of the coins and their purchasing power.

The media of exchange.

Before, however, we go into these details regarding coinage, it is worth while noting that coins were only one of the media of exchange; there were other media as well, though it is difficult to estimate the proportion of their circulation in ordinary transactions. One such was the use of bullion. Inscriptional evidence for the use of silver rods as currency comes from Tiruvattār, Travancore[147]—'Brought to........palace in the form of *nēli* 3 *śalāgai*'. i.e. a metallic rod of silver or gold.[148]

A century later, silver bars were in use as currency in Bijapur as well as Ceylon.[149] Elsewhere e.g. in the neighbourhood of Vijayanagar, gold, worked to a certain weight, was used as money in the early part of the fifteenth century.[150] In other parts, pieces of iron, worked into the form of large needles,[151] served as money. In addition to metals, other articles were in use as circulating media: Nicolo Conti tells us that some regions had no money but used instead stones they called cats' eyes. In other parts of the country, the medium of exchange consisted of cards inscribed with the name of the king.[152] To these may be added almonds, which circulated in Guzerat as small

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[147] *Ind. Ant.*, XXIV, p. 278.

[148] Sundaram Pillai, [*Early Sovereigns, Ind. Ant.*, XXIV, p. 278] notes that according to the Tamil *Nighaṇṭu* it might mean also a superior kind of gem. All the three ideas, however, relate to money. It is quite possible that bars of silver or gold passed in those days as currency with or without government stamp.

[149] Dames in Barbosa, *An Account*, I, pp. 99—101, n. Da Cunha, *Indo-Portuguese Numismatics*, p. 42, quoted ibid.

[150] Conti, Major, *India*, p. 30.

[151] Ibid. The term *śalāgai* might have included also these.

[152] Ibid.

change, and small cowries elsewhere.[153] In all these cases, as in South India, this state of things presupposes that the same concrete object could fulfil two functions—the function of direct consumption or of continued use as commodity and the function of a facilitating medium for the exchange of goods. The clear separation of these two distinct functions had not obviously been completed in the middle ages. In other words, the line of demarcation between a medium of exchange and a commodity of exchange was altogether indefinite, and money was not yet a thing unto itself in contradistinction to all other economic goods.

Again there were many transactions carried on where money did not enter at all. We are so familiar to-day with the system of paying taxes in money that we are apt to forget that in the middle ages taxes were paid, partly, in kind. In the tenth century, taxes on wet produce were invariably paid in kind, though for dry products, money was the usual rule.

The use of money.

In ordinary trade transactions, also, while money was in evidence, quite early, it was still possible, and perhaps quite the usual practice in the rural parts, to exchange things in kind. At the beginning of the eleventh century, in Tanjore, dhal, pepper, mustard, cummin, ghee, tamarind, curds, gram, plantains, salt, plantain leaves, areca-nuts, betel-leaves and pulse could be purchased for paddy, while cardomon

[153] Barbosa, *An Account*, p. 156. It may be added that the practice of using articles other than metals as currency was not peculiar to South India, at the time. In Carajan (Central Asia) porcelain shells passed for a single weight of silver (Marco Polo, *Travels*, II, p. 66) and conch shells in the islands near Socotra (Barbosa, *An Account*, I, p. 61.)

seeds, *campaka* buds, *khaskhas* roots, sugar and camphor were paid for in money.[154] Another inscription of approximately the same date records that lime, sugar, vegetables, and asafoetida were paid for in paddy.[155] In 1071 in Kōlār oil could be got for paddy while sheep, cloths and she-buffaloes had to be paid for in money, '*kāśu*'.[156] Again land was invariably paid for in cash.[157] While variations were thus observable in regard to the exchange of indigenous commodities, articles imported from foreign countries appear generally to have been paid for in money.[158] Evidence from other localities is not as plentiful or as clear.

One reason why money was sparingly used was that bartering for grain was not difficult at a time when public granaries were scattered all over the country,[158a] where they could convert grain into money; money was not very essential in payment of rent or in payment of wages. Again, it is necessary to remember that the office of a measure of value can be performed by metal money even when sales are actually made in terms of other commodities. In inscriptions we find grants of land with the stipulation that so many measures of oil

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[154] *South Ind. Inscr.*, II, 6, Venkayya, Introduction to the same volume, p. 18.

[155] *Ep. Ind.*, IX, p. 93. Sugar is mentioned as having been exchanged for paddy also in *South Ind. Inscr.*, II, p. 127, 70 and 71.

[156] *Ep. Car.*, X, Kōlār 108.

[157] 257 of 1905, 1386 A.D.

[158] *South Ind. Inscr.*, II, 9. The money which the guru Īśānaśivapaṇḍita deposited for providing camphor was lent out at money interest, while the money deposited by the minister for providing food grains was lent out at paddy interest. See also *A.R.E.*, 1913, part ii, para 22.

[158a] For mention of 'the granary of the village' see *A.R.E.*, 1918, part ii, para 69.

were to be supplied as interest. Equation between land and oil does not seem to have been established; some common measure must have acted as the medium for reckoning, though it did not come into play in actual payment. And such a state of things where money was merely a standard, without being a medium for payment, was well-known to the South Indian merchants who traded with other lands. Chau Ju-Kua says, foreign traders "barter there in samshu, rice, Ho-ch'ï silks, and porcelain ware. They calculate first the value of their articles according to their equivalents in gold or silver, and then engage in barter of these articles at fixed rates".[159] When we pass to later periods, from a survey of a number of inscriptions,[160] it appears clear that gradually money was coming into more common use even in ordinary trade transactions.

1230	A.D.	Hassan	paddy was quoted in	terms of	*gadyāṇa.*
1230	,,	,,	sesamum	,,	,,
1236	,,	Maṇḍya	ghee	,,	,,
1237	,,	,,	black pepper	,,	,,
1237	,,	,,	salt	,,	,,
1261	,,	Bēlūr	paddy	,,	,,
1261	,,	,,	sesamum	,,	,,
1276	,,	Sōmanāthapur	paddy	,,	,,
1276	,,	,,	sesamum	,,	,,
1276	,,	,,	ghee	,,	,,
1276	,,	,,	blackpepper	,,	,,
1276	,,	,,	salt	,,	,,
1278	,,	Chennapaṭṇa	paddy	,,	,,
1278	,,	,,	ghee	,,	,,
1291	,,	Kaḍūr	paddy	,,	,,
1291	,,	,,	sesamum	,,	,,
1316	,,	Chingleput	rice	,,	*paṇam.*
			perfumes	,,	,,
			lamps	,,	,,
			pepper-milk	,,	,,

[159]XIII century, Chau Ju-Kua, *Chu-fan-chï*, p. 68.

[160]*Ep. Car.*, III, Maṇḍya 121 and 122, V, Bēlūr 174, Hassan, 84, VI, Kaḍūr 49 and IX, Channapaṭṇa 65; see also Chandrasekhara Sastri, op. cit., p. 231, *Ep. Ind.*, VII, p. 132,

The same tendency is observable also in the payment of rents and taxes. The payment of rents in cash by the tenant to the landlord is another test to measure the gradual prevalence of money economy. An inscription from Annamasamudram[161] (Ātmakūr taluk 1246-47 A.D.) recites that certain lands were leased in perpetuity to one Rāma Reḍḍi for an annual cash rent of 130 *māḍai*.

Regarding the payment of taxes, it is interesting to note that in the manual published for the use of the officers of state by Harihara Raya's minister (founded on the text of Parāśara with a copious commentary) the assessment of the land and the conversion of the grain revenue into money are elaborately dealt with;[162] Harihara's order asking his people that the taxes should be paid in money instead of in kind was an additional public recognition of the fact that money was coming into more general use; royal taxation in money presupposes a considerable permeation of the use of money into private economic relations.[163]

Gold currency.

Taking up metallic currency, the coinage of South India was based essentially on gold and copper, though silver was not unknown. The wide use of gold for currency as well as purposes of ornament in the South was noted by Ferishta: 'It is remarkable', says he, 'that, (in the plunder of Mullik Kafoor) silver is not mentioned as having been taken during this expedition to the Carnatic...... No person wore bracelets, chains, or rings of any other metal than gold; while all the plate

[161] *Nellore Inscriptions*, I, Ātmakūr 7.

[162] Sturrock, *South Kanara*, I, p. 95.

[163] Weber, *Economic History*, p. 58.

in the houses of the great and in the temples, was of beaten gold", Mullik Kafoor presented the king with 96,000 maunds of gold.[164] Mahuan also noted[165] that the coinage of the country was, in the main, of gold. Thus we may well believe that gold continued to be the prevalent currency, till about the fourteenth century.

Silver.

But it is difficult to agree with Ferishta when he says,[166] "There is reason to conclude that silver was not used as coin in that country *at all* in those days". For we have specimens of Cōḷa coins in silver of the Rāja Rāja type in the 11th century,[167] weighing from 30 to 62.6 grains.

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[164]Ferishta, *History*, I, p. 375, ibid., p. 374.

For other examples of the abundance of gold in the South, see Yule, *Cathay*, IV, pp. 57—58. The treasures accumulated by Kalesa—Dewar, the Rajah of Maabar towards the end of the thirteenth century are stated in the Persian history of Wassāf at 1200 crores of gold, a crore being 10,000,000 *dinārs* [Wassāf, *Elliot*, History, III, p. 52]. We may observe, too, that even when the Emperor assigns to Ibn Batuta a large present estimated in silver *dinārs*, it is paid in gold Taungahs, Ibn Batuta (Defrēmery), III, p. 426; see also Yule, *Cathay*, IV, pp. 57—58.

[165]Mahuan, *Account*, *J.R.A.S.*, 1896, p. 344. See also Briggs, Ferishta, *History*, I, p. 375 n.

[166]Ferishta, *History* I, p. 375; italics are mine.

[167]Figured in Plate IV, appended to Elliot, *Coins* and p. 152 G.

No. 152	Silver	Weight	62 gr.
153	Silver	„	52·2 gr.
154	Silver	„	62·6 gr.

also

No. 1, in *Ind. Ant.*, XXV, p. 317—51½ gr.
(Plate facing p. 318 attributed to Rājarājadēva).

No. 2, in *Ind. Ant.*, XXV, p. 317—Silver 30 gr. attributed to Rajēndra Cōḷadēva I.

We have other specimens noticed in *The Mackenzie Collection*:—

"No. 11. Ancient Hindu Coins; two found with the figure of Hanumān".

"No. 12. Do. three found—uncertain".

"No. 13. Nrisimha Deva's half rupees; four found".

"No. 20. Old half rupees Bijanagar; four found; Rajaram's stamp in the Nāgarī character".

Wilson, *Mackenzie Collection*, II, Appendix pp. ccxxvii—viii.

In Malabar, we are told, they cut an alloyed silver into coins; on these they stamp an official seal. The people use them in trading,[168] and Chau Ju-Kua even goes on to establish a relation between silver and gold coins 12:1.[169] Another writer in the next century assures us[170] that there was much coined gold and silver in Malabar which was not exported to any other place. In the fifteenth century, we have the testimony of Mahuan to the effect that though gold was the chief currency, for making small purchases a small silver coin was used.[171]

There was also a certain number of copper coins in circulation, as will be shown in the sequel.

Specific coins considered.

To take up the particular coins in circulation, of indigenous gold coins mention is made chiefly of *fanam, gadyāṇa, kāśu, kaḻañju, kāṇam, māḍai, niṣka, partab, pon,* pagoda, and *varāha.*

The *kaḻañju.*

The weight of the coinage was based on an indigenous seed, the *kaḻañju,* or Molucca bean, weighing about 52 grains. This *kaḻañju,* which often occurs in Tamil inscriptions is to be interpreted sometimes as gold weight, and sometimes as

[168] Chau Ju-Kua, *Chu-fan-chï*, p. 88.

[169] Chau Ju-Kua, *Chu-fan-chï*, p. 89.

[170] Rashīdu-d Dīn, Elliot, *History*, I, p. 68.

[171] Mahuan, *Account*, *J.R.A.S.*, 1896, p. 344; see also *Ying yai shêng lan* (1425—1432), Rockhill, *Notes*, *T'oung Pao*, XVI, p. 451. In trading they use gold and silver coins........ "The silver coin is somewhat like a shell-spot (? it is called *ta-erh, tar*) and is reckoned at four *li* and fifteen are equivalent to one gold coin"; see also ibid., p. 457.

coins.[172] As coin it weighed about 52 gr. and evidently derived its name from the *kaḻañju* seed, its original name being *pon,* which simply means gold in Tamil, becoming *hon* in Canarese, and *hun* to Mahomedan authors.[173]

Pagoda.

The standard coin was known as the *hun*[174] or the *varāha,* and weighed 52 grs. It was generally referred to as the 'pagoda' by the numerous foreign travellers of the period.

The origin of this vernacular designation *varāha* or *varāgan,* (boar) applied to the gold coins of South India, must be traced to the boar device, characteristic of the Cāḷukyan coinage. The Cāḷukyan boar as well as

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[172] *A.R.E.*, 1916, part ii, para 8; *A.R.E.*, 1912, part ii, para 21; 232 of 1923 mentions the deposit of 200 *kaḻañju* of *pon.*

[173] Elliot, [*Coins*, p. 53] adds they appear to have been in use for a great length of time and probably constituted a considerable portion of the vast treasures transported to Delhi by the armies of Ala-ud-din and his successor in the fourteenth century.

The weight of the *kaḻañju*, according to the Government Epigraphist is 80 gr. *South Ind. Inscr.* III, Index and according to Mac Lean, *Manual* s. v. Calanjy 82 gr. Pran Nath [*A Study*, pp. 89 and 91] has attempted to estimate its value at 57·6 gr.; these views are discussed in Note F.

[174] Prinsep gives the average weight of the pagoda as 52·4 gr. Prinsep, *Essays*, II, [Useful Tables], p. 43.

Kelly, '*Universal Cambist*, I, p. 90.

The pagoda coins, published by Bidie, (*J.A.S.B.*, LII, pp. 33 ff.) give the following weights:—

Buddhist	51·945 gr.
Cāḷukya	58·225 „
Lingāyat	51·025 „
„	50·85 „
Vijayanagar	52·5 „
„	52·525 „
„	50·875 „
„	51·837 „
„	52·912 „
Later	51·05 „
	50·725 „

the fish of the Pāṇḍyas of the extreme south continued to appear during the eleventh century on the coins of the Cōḷa dynasty of Tanjore after it had absorbed those two lines. Inscriptional reference to the equation of *varāha* with pagoda is contained in the Karkala inscription of Bhairava II.[175]

Gadyāṇa.

The *gadyāṇa,* which occurs in the Canarese inscriptions, was also based on the same unit of weight, and the inscription referred to equates it with the pagoda.[176] It was perhaps only the Canarese name for the *kaḻañju,* a term likewise used in Telugu.[177] But the weight of the *gadyāṇa* was a little more than the *kaḻañju,* ranging between 61·75 and 63 gr.—obviously heavier than the pagoda or *varāha.* This was also in keeping with the grain-weight of the Canarese *haṇa* which was approximately 6·2 gr.,[178] 10 *paṇam* or *haṇa* making 1 *gadyāṇa.*[178a] In calculating the value of a *gadyāṇa,* therefore, we must take it, approximately, as half a sovereign, while

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[175]*Ep. Ind.*, VIII, p. 125. In later days, the *varāha* appears to have also been coined to the weight of a double pagoda (See Elliot, *Coins*, Plate III and p. 152 E, No. 112—gold coin, weight 119·7 gr. *obv.* Viṣṇu under an arch; Rev. Śrī Kṛṣṇa Rāya); 'Abdu-r Razzāk values it at 20 *fanam* or 2 *partab,* whereas the old *varāha* was only 10 *fanam*, see 172 of 1916, *A.R.E.*, 1916, part ii, para 60—*varāha*=10 *paṇam* (dated 1425 A.D.).

[176]l. 28, *varāha*=pagoda=*gadyāṇa.*

[177]Elliot, *Coins*, p. 51.

[178]The weight of a *haṇa* dated 1346 A.D. (preserved in the coin chest of the Director of Achaeology of Mysore, kindly communicated to me by Mr. H. Srinivasachariar of Mysore, is 6·2 gr. whereas that of a Vijayanagar *paṇa* is 5·2 gr.

[178a]1112—	*Ep. Ind.*, XIII, p. 58 (Nizam's Dominions)	10 *paṇa.*
1215—	*Ep. Car.*, V, Arsikere 51	10 *haṇa.*
1407—	*Ep. Car.*, Heggaḍadēvankōṭe 62	10 *haṇa.*

that of a *varāha* or pagoda, or *kaḻañju* or *hun* was 4|9 of a sovereign.

The *kāśu* and the *pon.*

Two major gold coins, the value of which in terms of their gold content is not clear, are the *kāśu* and the *pon,* which occur so frequently in South Indian inscriptions. The value of the *kāśu* is discussed in Appendix vii; here it need only be pointed out that the attempt to give a uniform value is clearly unscientific, due to the variety of meanings attached to the term. Probably it is safe to say that *kāśu* was a general term applied to coins, the metallic content of which varied between 6 gr. and 156 gr. if gold; and if copper, the smallest copper coin, probably equivalent to a pie.

The other coin is *pon.*[179]

Contemporary inscriptional evidence tells us that a *pon* was equal to a (Dēvarāya) pagoda,[180] a *varāhan*[181] and 10 *paṇam.*[182]

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[179]Mac Lean has the following note on *pon*:—The *pon* is specifically an ancient small gold coin, equal to 9 or 10 *fanam*, the origin of the Mahomedan *hoon*, through the Canarese, and the English pagoda; whenever a sum of money is mentioned in ancient Tamil records, the denomination is *pon*—Mac Lean, *Manual*, III, s. v. *pon*. It is also useful to remember that *pon* originally meant any metal (*lōham*), and later was restricted to gold.

[180]*A.R.E.*, 1920, part ii, para 40.

[181]172 of 1916, dated 1425 A.D.

[182]Ibid., *Arch. Surv. Southern India*, IV, p. 88 n.

Paṇam.

The *paṇam* here referred to was a gold coin whose average metal content was 5·28 gr.[183] and a *pon* would thus be equivalent to the *kaḻañju,* a fact which is testified to independently by two important inscriptions of Pudukkōṭṭai.[184]

Niṣka.

The *niṣka* also occurs in South Indian inscriptions, though not so frequently as the pagoda, *varāha,* or *hun.* *Niṣka* as a coin differed in metal content at different times.[185] Thus *niṣka,* according to Manu,[186] was 4 *suvarṇa* each of 16 *māṣa,* but according to Bhāskara,[187] it was 57·6 gr. of gold, a little more than a tenth of the *niṣka* of Manu. Thus we have merely the name preserved, but not the original denomination. The weight of the *niṣka* of the middle ages cannot then be determined with reference to the rules of Manu. It must be determined from contemporary evidence. There is one inscription[188] which gives us some guidance in the matter. The term *niṣka* in the Sanskrit portion in an

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[183] See the weight of the *paṇa* kindly communicated to me by Mr. Srinivasachari noted above. See also, Cunningham, *Coins,* p. 52. According to Prinsep, *Essays,* II, [Useful Tables], p. 44, where 15 *fanam* are given, 13 of them weigh from 5·15 gr.—5·85 gr. and they include the denominations Sulī, Tanjore, Vīrarāya and Wodiar. Thomas is inclined to estimate the weight of a *paṇam* at 6 gr. (Thomas, *Chronicles,* p. 170) but this must obviously be the *gadyāṇa-paṇa* which is about 6:2 gr. Elliot equates it with the weight of a *mañjāḍi* which would weigh approximately 5 gr. (Elliot, *Coins,* pp. 48—49).

[184] No. 135—12 buffaloes of the value of 20 *pon* or *kaḻañju.*
No. 239—15 *pon*=15 *kaḻañju* of gold.

[185] Monier—Williams, *Sanskrit—English Dictionary,* s. v. *niṣka.*

[186] Manu, *Dharmaśāstra,* ch. viii, 134 and 137.

[187] *Ep. Car.,* IV, p. 31.

[188] *South Ind. Inscr.,* III, 164, p. 236.

inscription[189] corresponds to the *kalañju* in the Tamil portion. Accordingly the *niṣka* of the period may be taken to correspond to the *kalañju*, pagoda and *varāha* or 52 gr. approximately.[190]

Subsidiary coins.

The chief subsidiary coins that we meet with in our contemporary accounts are the *hoṇa,* the *kāṇam, māḍai, pardao, partab,* the *fanam* or *paṇam* and *kāṭi.*

Hoṇa.

Hoṇa, according to Elliot,[191] was equal to a *pratapa* or half pagoda and may be considered equal to 26 gr.

Kāṇam.

The coin (or weight of gold) *kāṇam* is mentioned in the Travancore Inscriptions.[192] From the context, in which it occurs, it appears that *kāṇam* was less in value than a *kalañju*: "The *ūrāḷar* were made subject to a fine of some sum of gold to the god in the temple and twenty-five *kalañju* and five *kāṇam* to the then ruling king;" according to another,[193] it appears to be equivalent to 1|10 *kalañju,* a little more than 5 gr., in fact, equivalent to a *paṇam* or *fanam.*

Māḍai.

The Tamil *māḍai* and the Telugu *māḍa* form part of the names of various gold coins, e.g. Madurāntakan-māḍai,[194] Bhujabala-māḍai,[195] Ganḍa-

[189] 197 of 1915, Brahmadēśam, North Arcot, of the 13th year of Pārthivēndrapati.

[190] See also *A.R.E.*, 1916, part ii, para 8.

[191] In a letter by Elliot, published in Thomas, *Chronicles*, p. 224.

[192] *Trav. Arch. Series*, II, 4 A.

[193] *Trav. Arch. Series*, II, p. 146.

[194] *Ep. Ind.*, V, p. 106 and n. 3, *South Ind. Inscr.*, III, pp. 143, 164.

[195] *A.R.E.*, 1897, para 6.

māḍa,[196] Birudu-māḍa,[197] Kulōttunga-māḍa, Jaya-māḍa, Cāmara-māḍa, Gandhavāraṇa-māḍa, or Gandha-hasti-māḍa, Uttamagaṇḍa-māḍa, Rājarāja-māḍa,[198] Nokki-māḍai,[199] Nandi-māḍa,[200] and Śingāya-māḍa.[200a] The relation of the *māḍai* to other gold coins is one about which, in the face of the varied, and sometimes conflicting, evidence, it is difficult to make a general statement. From available inscriptional evidence,[201] it is only safe to say that it was either half a pagoda or a pagoda, according to the particular context in which it finds mention.

Pardao.

The *pardao* (*partab*), according to 'Abdu-r Razzāk (1443 A.D.), contained 10 *fanam* and was half a *varāha*,[201a] while, according to Varthema,[202] [1504 A.D.] it contained 20 *fanam*. According to Barbosa,[203] it was 320 *reis*; Paes [204] would have it at 360 *reis*. As the ordinary pagoda was estimated at 10 *paṇam*,[205] it appears fair to say that 'Abdu-r Razzāk's *pardao* was the pagoda of 10 *paṇam*, containing 52 gr. of gold, while his *varāha* of

[196] *Ep. Ind.*, V, p. 32.

[197] 175 of 1897.

[198] Hultzsch in *Ep. Ind.*, VII, p. 130, n. 1.

[199] *Ep. Car.*, X, Mulbāgal 49 (b).

[200] 380 of 1905

[200a] 257 of 1905.

[201] I have examined the evidence in Appendix v.

[201a] 'Abdu-r Razzāk, Major, *India*, p. 26.

[202] Barbosa, *An Account*, I, p. 191.

[203] Varthema, *Travels*, p. 130.

[204] Sewell, *A Forgotten Empire*, p. 282.

[205] supra, pp. 709—10; a real was equal to ·28d.

20 *fanam* was the double pagoda of later days. Varthema's 20 *fanam pardao* must have been the double pagoda.[206]

Kāṭi.

The *kāṭi* was a subdivision of a *varāha*, being ¼. An inscription dated 1436 A.D. clearly says 4 *kāṭi*=1 *varāha*.[207]

Paṇam.

The *paṇam* or *fanam* was the chief coin in circulation according to both Mahuan and 'Abdu-r Razzāk. From the relevant material[208] in connexion with the value of the *paṇam*,

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[206] One example of this has been published in Elliot, *Coins*, Plate III, and p. 152 E, No. 112, 119·7 gr. *obv.* Viṣṇu under an arch; *Rev.* Śri Kṛṣṇa Rāya.

[207] *Ep. Car.*, VIII, Nagar 69—1463 A.D.

[208] *Fanam* or *haṇa* or *kāṇam*, *Trav. Arch. Series*, II, p. 146.

A. In relation to the *gadyāṇa*.

1112 A.D.—*Ep. Ind.*, XIII, p. 58—*gadyāṇa*=10 *paṇam*.

1215 A.D.—*Ep. Car.*, V, Arsikere 51—*gadyāṇa*=10 *haṇa*.

1407 A.D.—*Ep. Car.*, IV, Heggaḍadēvankōṭe 62—*gadyāṇa*= 10 *haṇa*.

B. In relation to the *pon*.

1425 A.D.—172 of 1916; *A.R.E.*, 1916, part ii, para 60—*pon* 10 *paṇam*.

1547 A.D.—561 of 1919—*pon*=10 *paṇam*.

C. In relation to the *varāha*.

1425 A.D.—172 of 1916: *A.R.E.*, 1916, part ii, para 60—*varāha*=10 *paṇam*.

*1443 A.D.—'Abdu-r Razzāk, Elliot, *History*, IV, p. 109—*varāha*=20 *paṇam*.

D. pagoda, *pardoa*, etc.

1443 A.D.—'Abdu-r Razzāk, Elliot, *History*, IV, p. 109—*partab*=10 *paṇam*.

*1510 A.D.—Varthema, *Travels*, p. 130—*pardao*=20 *paṇam*, (may refer to double pagoda).

E. *kaḷañju*—

Trav. Arch. Series, II, p. 146, *kaḷañju*=10 *kāṇam*.

we may gather that the gold *fanam* was 1|10 of the *pon, kaḻañju,* etc., viz. 5·2 gr. while the *gadyāṇa paṇa* was 6·2 gr.[209]

This conclusion is also supported by contemporary Chinese evidence:[210] "In trading they use gold and silver coins. The gold coin which is nine-tenths fine is called *fanam*; it is reckoned (in weight) one *candareen*"[211]—one *candareen* was about 5 gr.

Subdivisions of the *paṇa* also existed: the *pāga* or *hāga* was one-fourth of a *paṇa*.[212] The *hāga* was also equivalent to or probably another name for *kākiṇī;* for in the *Līlāvatī* of Bhāskara,[213] it is stated that 4 *kākiṇī* made one *paṇa*.[214]

F. *māḍai*—

1255—386 of 1919, *māḍai*=9¾ *paṇam*.

*1316—*Ep. Ind.*, VII, p. 132—*māḍai*=5 *paṇam* (may be ½ pagoda).

Seeming exceptions are noted above with asterisks. Those under C, D, and F have already been explained—supra, pp. 709 and 713 under *varāha,* and *māḍai.*

Thomas [*Chronicles*, p. 170] is inclined to give a uniformly higher value to the *fanam* : "The average weight of the gold *fanam* is 6 gr." (p. 170). In the light of the inscriptional evidence noted above, and on the evidence of actual weight [Elliot, *Coins*, p. 146] we may safely say that the weight of the *fanam* was between 5 and 6 gr. average 5·2; with the exception of the *gadyāṇa-paṇa* which was between 6 and 6·2 gr.

[209] Ref. above to the Vijayanagara *paṇa* 5·2 gr.; *gadyāṇa* (Hoysaḷa) *paṇa* 6·2 gr. of date 1346, kindly communicated to me by Mr. Srinivasachariar of Mysore, supra, p. 710 n. 178.

[210] *Ying yai shĕng lan*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 451.

[211] See Yule and Burnell, *Hobson-Jobson*, s. v. Candareen and Tael.

[212] *Ep. Ind.*, IX, p. 267, and Krishna Sastri, ibid., n. 2. *Ind. Ant.*, X, p. 189 n. 17.

[213] Quoted in *Ep. Car.*, IV, p. 31.

[214] Two references from contemporary literature point to the fact that *paṇa* was also used to denote certain copper coins, the value of which, however, is not known:—

1. In the text, 'Never until the subject matter is below a thousand should the plough be allowed' etc. the thousand of a

Akkam.

Akkam is specified as 1|12 *kāśu*[215] but whether it was a copper coin or silver is not clear. If it is the Prākṛta form of the Sanskrit word *akṣa* it would be equivalent to the *kārṣa*,[216] which according to earlier evidence,—the Nārada Smṛti,[217] was a silver coin current in Southern India. Provisionally, therefore, we may take it that the *akkam* referred to in the inscription was a silver coin, weighing about 57·6 gr.[218]

Of other silver coins we have mention of the *tar* which, according to the contemporary chronicler,[219] was $\frac{1}{6}$ of a *fanam,* while '*Taurh*' according to Mahuan,[220] was 1|15 of a *fanam* and according to Varthema,[220a] *tare* was equal to 1|16 of a *fanam*. Other silver coins were the foreign coins *dramma* and *denarius.*

Of copper coins there were the copper *fanam* (in later days), the *jital* and the copper *cāsh.*

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copper *paṇa* should be understood—"*Tāmrika paṇa sahasram boddhavyam*", *The Mitākṣarā,* ii, 99 (1), 215.

2. A *māṣa* is 1|20 of a copper paṇa '*tāmrika paṇasya*'—Mādhavācārya, *Parāśara-Mādhava,* III, p. 267.

[215] *South Ind. Inscr.,* II, p. 76 n. 2.

[216] Which is generally taken as 144 gr. [Copper], 57·6 gr. if silver or gold. Cunningham, *Coins,* pp. 46 and 52.

[217] *Kārṣāpaṇe dakṣiṇasyām diśi raupyaḥ pravartate* 57. Nārada smṛti, p. 229, cited in Pran Nath, *A Study,* p. 89, n. 2.

[218] Pran Nath, *A Study,* p. 89.

[219] 'Abdu-r Razzāk, Major, *India,* p. 26.

[220] Mahuan, *Account, J.R.A.S.,* 1896, p. 344.

[220a] Varthema, *Travels,* p. 130. In the text we have 'He also coins a silver money called *tare*...... And of these small ones of silver, there go sixteen to a *fanam*'. Badger, however, in a note in the same page [130 n. 1] puts it Tare=1|15th of a *fanam*—evidently a misprint. Temple in his edition of Varthema, [Varthema, *Travels,* (Temple), p. 53] has 'sixteen'.

Foreign currency.

In addition to the indigenous coinage, there were also the currencies of foreign countries in circulation: some of these like the *boddika,* and *dramma* had a large internal circulation. The circulation of the latter extended from Guzerat to Tinnevelly, and may be traced from the tenth century to the fourteenth.[221]

DRACHMA.

Name.	Date.	Place.	Remarks.
1. ..	907	Mysore ..	According to the rate of metal *drammas.*
2. ..	1118	Ramnad ..	=1|7 *kāśu.*
3. ..	1123	Chingleput ..	
4. ..	1132	Trichinopoly ..	
5. ..	1203	Tinnevelly ..	for purchasing sandal, camphor, etc.
6. ..	5th year of Māṟavarman Sundara-Pāṇḍya-dēva ..	Tinnevelly ..	
7. ..	"	" ..	
8. *diramam* ..	1204	Tinnevelly ..	
9. *añjumēni-tiramam* ..	1215	Ramnad ..	
10. *tiramam* ..	1230	Ramnad ..	
11. ..	1247	Ramnad ..	=The value of the ...*tiramam* was increased from 5 *mā* to 7 *mā* of *kāśu.*
12. ..	1304	Guzerat ..	

It is interesting to observe that the coin had attained such an assured circulation as to be related to the native currency in the *Līlāvatī* of Bhāskara who says that one *dramma* was equal to 16 *paṇa,* and that 16

[221] *Ep. Car.*, III, Maṇḍya 14, 284 of 1923, 280 of 1910, 578 of 1908, 682 of 1916, 348 of 1916, 351 of 1916, 459 of 1909, *A.R.E.*, 1910, part ii, para 33, 322 of 1923, 412 of 1914, *A.R.E.*, 1915, part ii, para 32, 91 of 1924, *A.R.E.*, 1924, part ii, para 31, Mērutunga, *Prabandhacintāmaṇi*, p. 18.

dramma made one *niṣka.*[222] There were others with which the merchant engaged in foreign trade was in the main concerned. Such coins were the *boddika, cruzado, dirhem, dinār, ducat, fedeo,* gold fiorin, *larin, livre tournois, mark, real, saggio, sequin, tael, vinteem,* and *xerafin.*

Boddika.

The *boddika* was equal to the Greek *obolus,* and was one-sixth of a *dramma*—a silver coin weighing 11:2 grs. The *drachma* itself was a silver coin weighing on the average about 60 grains though coins weighing from 56 to 65 grains have been found.[223] In modern currency, therefore, the *boddika* or *obolus* can be thought of as representing 1·625d. and the *dramma* as 9¾d. respectively.

Dirhem.

The *dirhem* vaguely represented the *drachma,* or rather the Roman (silver) *denarius,* to which the former name was applied in the Greek provinces.[224]

Cruzado.

The *cruzado* was Portuguese money; its average weight may be taken at about 60 gr., that is 9s. 9d. of English money,[225] and the half *cruzado* at 30 gr. or 4s. 10·5d.

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[222]*varāṭikānām daśaka-dvayam yat sā*
kākiṇī tāś ca paṇāś catasraḥ
tē ṣōḍaśa dramma ihāvagamyō
drammais tathā ṣōḍaśabhiś ca niṣkaḥ

The *Līlāvatī,* quoted in *Ep. Car.,* IV, p. 31.

[223]Cunningham in *A.S.I.,* XI, p. 176. An inscription dated 1216 A.D. [*J.A.S.B.,* XIX, p. 454.] records the loan of 2,250 *ṣaḍboddika dramma* or *dramma* of 6 *boddika* each; and Bhandarkar [*Indian Numismatics,* pp. 206—07] equates it with 65 to 66 grains, from the analogy of the Greek *drachma.*

[224]Yule, *Cathay,* IV, p. 56.

[225]Dames in Barbosa, *An Account,* I, p. 65 n. 1.

Da Cunha, *Indo-Portuguese Numismatics,* quoted ibid., p. 22, Ravenstein, in Vasco Da Gama, *The First Voyage,* p. 96 n. 2, 9s. 8d.

Dinār.

The gold *dinār* of the 'Abbāsīd Khalīfas was about 9s. 9d.;[226] the *fedeo* was 15 *reis* on the average. Taking the *real* at ·28d. it would make 4·2d., it was 1|20 of a *pardao*.[227] The *real* was the smallest unit, being much less than an English penny and bearing the relation to *cruzado* thus 1:420 or ·28d.[228]

Mark.

Of Venetian currency, mainly in the pages of of Marco Polo, we find mention of three coins—the silver *mark*, the gold *ducat* and the *sequin*.[229] The *mark* of silver may be taken fairly at £2-4s. of English money and the gold *ducat* at 9s. 4·284d.[230] The gold florin was nearly equal in value to the *sequin*.[231]

Florin.

Florentine currency was mainly represented by the gold florin, with a value of 9s. 4·8516d. English money.[232]

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226 Dames in Barbosa, *An Account*, I, p. 65 n. 1; according to Rice [*Ep. Car.*, XII, Tumkūr, p. 16 n. 2] *dinār* is the same word as *denarius*, a gold coin also called *niṣka*.

227 Barbosa, *An Account*, I, p. 156. Barbosa says, "it is nought but a name being the value of eighteen *reis*, or fourteen, or twelve, according to place, for it is more in some places and less in others". It may be identified with the *fedea*, "a nominal coin=15 reis" (Da Cunha, *Indo-Portuguese Numismatics*, p. 31, quoted by Dames in Barbosa, *An Account*, I, p. 156 n. 2).

228 Real is otherwise called *maravedis;* see Barbosa, *An Account*, I, p. 204, and Dames, ibid., p. 65 n. 1, p. 178 n. 1 and p. 191 n.

229 Sernigi also notes that Venetian and Genoese ducats were current at Calicut—Vasco Da Gama, *The First Voyage*, p. 128.

230 Yule, in Marco Polo, *Travels*, II, p. 591. Prinsep, *Essays*, II, Useful Tables, pp. 43—44: Ducat 53·50 gr.

231 Sequin, 9s. ·284d. Yule, *Cathay*, IV, p. 58 quoted from Cibrario, *Pol, Economica del Medio Evo*, iii, 228, 248, 52·40 gr. Prinsep, *Essays*, II, [Useful Tables], p. 44.

232 Yule, *Cathay*, IV, p. 58.

It is indeed a curious fact that the Portuguese *cruzado,* the gold *dinār* of Egypt, the Venetian *ducat,* and *sequin,* and the Florentine *florin* should nearly be equal to the indigenous pagoda or *varāha* coins.

Larin.

The *larin* or *laris* named from Lar, their place of origin, was Persian money. It was not a coin in the ordinary sense of the word, but a bent rod or bar of silver stamped at the end,[233] and was worth at this period 1s. 5d. being 1|7 of the gold *cruzado.*[234]

Livre tournois.

The *livre tournois,* French money, may be taken as equal to 14s. 3·8d.[235]

Tael.

Of other coins that we meet with, mention may be made of the Chinese *tael*—silver 6s. 7d. and gold £3. 5s. 10d.; the *vinteem* was 17|20d., and the *xerafin* of 300 *reis* about 7s.

Fluctuations in value.

We have seen that the currency system of the country was not based on a uniform standard. First, there were transactions in which a certain weight of precious metal took the place of money. Again, there were foreign coins, the value of which was not always uniform. The indigenous coins themselves were liable to fluctuations in value; what we have indicated in the foregoing pages is only a norm or average, at best an approximation. At a particular time and place, the actual might vary from the average, for the coins were liable to deterioration or debasement. Contemporary

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[233]Moreland, *India,* p. 57.

[234]Dames in Barbosa, *An Account,* I, p. 100 n. 1. 100 n. and p. 65 n. 1.

[235]Marco Polo, *Travels,* II, p. 590.

chroniclers noted[236] with reference to the *pardao* that the gold was rather base; those made in Hora were perfectly genuine while in many other places were false. Reduced weight may also be a result of the increase in the price of the metal concerned. The result was that coins could not be expected to pass as fixed standards of value; assaying and weighing were necessary before a coin could be accepted in payment for articles. In other words, the coin was conceived as the mere embodiment of a quantity of metal. The recognition, therefore, that even coins with a metallic content reduced by use, or those originally of inferior content may be accepted without question in trade is of a later evolution in the conception of money; i.e. coins were not at this period regarded as fixed standards of value, but rather as a form of merchandise, of which the equivalent in other commodities depended upon the weight and the fineness of the coins tendered.[237] Assaying was a regular occupation of a class of people—the goldsmiths. The gold presented is stated in the Cōḷa period to be *tuḷai-pon,* subsequent to the gold being burnt, cut, melted, cooled, and found current, wanting neither in purity nor in weight.[238] Village assemblies also were careful to receive gold coins of the proper weight and fineness in their transactions as is evidenced by the mention of *Ūrkkal-Śemmaippon,* also called

Assaying and weighing.

[236] Barbosa, *An Account,* I, p. 204. Hora was supposed to be the name of the mint-town where these Coins were struck. The coins were most probably struck in Vijayanagar itself, see Dames, ibid., n. 1.

[237] Moreland, *India,* p. 59.

[238] A.R.E., 1912, part II, para 21.

Tīppōkkuc-cempon[239] or *palankāśinōḍum oppadu,* i.e. corresponding or agreeing with the old coin (that had been tested by fire). These stipulations in inscriptions of the coins that village assemblies would accept are evidence to show that the current coins varied in weight and fineness. Hence coins were generally taken at their weight.[240] That fineness of gold was taken into consideration is shown by an inscription which mentions gold of 3 kinds of fineness 8, 8½, and 9 [241]; and often the money had to be delivered in the presence of the village goldsmith.[242] For purposes of testing and verification touchstones and in some cases, a gold bar of the royal standard of purity were kept, and the coin was received after a process of testing.[243]

Assaying was thus a regular occupation of the goldsmiths. The fees for assaying varied from place to place. In 1144 A.D. at Sedāmbal the assay fee was a quarter *fanam* on every gold piece,[244] a rather high rate. The office of the examiner of coins was indeed of some importance, and heavy punishments were prescribed for one who went wrong in the work: "That examiner of coins, moreover, who declares a *dramma* or other coin good even when it is alloyed with

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239 50 of 1925, *A.R.E.*, 1925, part ii, para 10. *South Ind. Inscr.*, III, 103, p. 236.

240 *South Ind. Inscr.*, III, 180, 'We received 12 *kalañju* of gold by weight'.

241 *South Ind. Inscr.*, II, 71—1446 A.D.

242 494 of 1921—1353 A.D.

243 516 of 1919.

244 *Ep. Ind.*, XIX, p. 40—1144 A.D.

copper or the like, or declares a good coin to be false, such a one shall be fined in the highest amercement".[245]

Money changers.

Goldsmiths were also often money changers, and bankers; these money changers are referred to by Vasco Da Gama:—[246]

"The overseer of the treasury then sent for a changer, who weighed it all, and proved it with his touchstones, which they carry for that purpose, and with which they are very clever; and they set a value on each coin."

The actual process of testing was witnessed by Varthema; and he describes it in a very interesting passage, which, though long, is worthy of being reproduced, as it gives us some idea of the conditions under which internal trade suffered delay; incidentally it shows also the cleverness of the money changers of the period.

"The money changers and bankers of Calicut have some weights, that is, balances, which are so small that the box in which they stand and the weights together do not weigh half an ounce; and they are so true that they will turn by a hair of the head. And when they wish to test any piece of gold, they have carats of gold as we have; and they have the touchstone like us. And they test after our manner. When the touchstone is full of gold, they have a ball, of a certain composition which resembles wax, and with this ball, when they wish to see if the gold be good or poor, they press on the touchstone and take away some gold from the said

[245] Vijñānēśvara, *The Mitākṣarā*, ii, 241.

[246] Vasco Da Gama, *The Three Voyages*, p. 181.

touchstone, and then they see in the ball the goodness of the gold, and they say; '*Idu nannu, Idu Āga*',[247] that is, 'that is good, and this is poor.' And when that ball is full of gold, they melt it, and take out all the gold which they have tested by the touchstone. The said money-changers are extremely acute in their business."[248]

The mention of money-changers and bankers brings us to an incident recorded by Ferishta[249] which is a singular example of the effect of religious animosity on economic relations. In the reign of Mahomed Shah I Bahmani, the Hindu bankers, at the instigation of the Rajas of Vijayanagar and Telingana,[250] melted all the coins which fell into their hands in order that those of the infidels might alone be current in the Dekhan. Mahomed Shah, incensed against them on their persisting in the offence, put to death (in 1360 A.D.) many persons guilty of such conduct and limited the business of the mint and of the bank to a few Hindus of the Khatri caste who had accompanied the various armies which had invaded the Dekhan, and now enjoyed a monopoly of the business of banking and money changing until in the reign of Firuz Shah Bahmani (1397-1422) the descendants of the slaughtered men

[247] The translation reads *mannu*. I have no access to the original, but *mannu* appears to be meant for '*nannu*', which means in Malayalam, 'is good', in contrast with *Āga* (which follows)='is not good'.

[248] Varthema, *Travels*, p. 168.

[249] Ferishta, *History*, II, pp. 300—01.

[250] Ferishta attributes this to the instigation of the Rajahs of Telingana and Vijayanagar who wished that their coins only should be current in the Dekhan, but it is equally probable that it was due to the inborn habit of hoarding which prevails amongst Hindus. See for this point of view, Gribble, *A History*, I, p. 36.

were permitted on payment of a large sum of money to resume the business of their forefathers.

This survey of currency will not be complete without a reference to the administrative side of coinage.

Administrative aspect.

The prerogative of coinage of course pertained to the ruler—or rulers when there were several; indeed that most of the old coins were issued by rulers, foreign or indigenous is too well-known to require any proof. The mint in one context is referred to as *'accinaṭankasāla'* the mint where coins were stamped'.[251] Whether the issue of coins was made from one central mint or from several cannot be ascertained with accuracy—though Barbosa speaks[252], generally, of the *pardao* being made in many towns in the Vijayanagar kingdom.

The place of the mint in the administrative system of the country is interesting. In the Vijayanagara period, we are told, "the usage of the country is that at a stated period every one throughout the whole Empire carries to the mint the revenue (Zar) which is due from him and whoever has money due to him from the Exchequer receives an order upon the mint".[253]

Though coinage was, generally, a prerogative of the state we find some examples in South India of private agencies being allowed by the state to issue coins. Such are the coins which are said to have been struck at some of the principal temples in South

[251] 499 of 1915—1133-34 A.D.

[252] Barbosa, *An Account*, I, p. 204.

[253] 'Abdu-r Razzāk, Elliot, *History*, IV, p. 109. 'Abdu-r Razzāk himself received such an assignment on the mint.

India.[254] These were "local issues generally connected with the most revered shrines, and circulating in their vicinity", with the consent of the state. They were distinguished from state currencies by the fact of their not bearing the device of any dynasty nor the name of any king.

Transmission of currency.

Finally we may also point out the facilities for transmission of currency that existed in the middle ages. The *hundi*—bill of exchange—was certainly well-known. Witness one Ariyanatha Mudaliar who "appointed villages to remit *hundis* (or bills of exchange) to *Cāsi* Benares for the purpose of daily feeding there one thousand Brahmans".[255] It must, however, be pointed out that we have no means of understanding the real character of the *hundi*. The present day bill of exchange is a means of payment characterized by the fact that three persons are involved in it: the receiver, the drawer and the drawee; the bill can be transferred to third parties by endorsement, every individual endorser becoming responsible with no question raised regarding the transaction, in connexion with which the bill was drawn; it is liquid. How far the *hundi* of the middle ages was liquid is more than that we can say; it is probable that it was an instrument, similar to our checks,—a mere means of payment, ordinarily of payment at a distance, by means of which one paid debts with money to which one had a claim at some other

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[254]Sewell, *Copper Coins, Ind. Ant.*, XXXII, pp. 313 ff. See also Bhandarkar, *Indian Numismatics*, pp. 152—53.

[255]Taylor, *Oriental Historical Manuscripts*, II, p. 115, date about Śaka 1400, (1478 A.D.).

place, the difference in place between the one who promised payment and one who actually made the payment being essential to the instrument.

Note D

TAXES ON LAND

The taxes on land fall into 4 main groups:—1. Land revenue proper. 2. Taxes for maintenance of irrigation works. 3. Taxes for the maintenance of village officers. 4. Taxes for the maintenance of temples and Brahmans.

We may venture to suggest tentatively the equivalents for these in Tamil inscriptions:

i.	*kaḍamai*	
ii. } iii. }	*antarāya*	} *kuḍimai*
iv.	*viniyōgam*	}

One inscription in particular suggests this classification. No. 39 of 1924, dated 1325 A.D. divides taxes on land into 4 groups *kaḍamai, antarāya* and *viniyōgam* and *vādākkaḍamai. Antarāya* and *viniyōgam* are grouped under one term, viz. *kuḍimai* in No. 224 of 1917, (1165 A.D.), *A.R.E.*, 1918, part ii, para 38. In others, the taxes on land are grouped under two heads only *kaḍamai* and *kuḍimai,* see 224 of 1917, 335 of 1921, *South Ind. Inscr.*, I, 61, line 3, *South Ind. Inscr.*, V, 436.

The suggestion in this note is purely tentative; it does not affect the conclusions in the main body of the text.

Note E

PROFESSIONAL TAXES

accutari	..	tax on weavers
ērimīn kāśu	..	„ fishermen
iḍaippāṭṭam	..	„ shepherds
iḍangai vari	..	„ left hand castes
kaḍai iṟai	..	„ merchants
kuśakkāṇam	..	„ potters
maggadere	..	„ weavers
nallāvu	..	„ shepherds
nallerudu	..	„ shepherds
ōḍakkūli	..	„ feery-fee
paraittari	..	„ weavers
śālikattari	..	„ weavers
śekkukkaḍamai	..	„ oilmongers
taṭṭārpāṭṭam	..	„ goldsmiths
taragu	..	„ brokers
tari iṟai	..	„ weavers
tūcakattari	..	„ weavers
vaṇṇārpārai	..	„ washermen
valangai	..	„ right hand castes
viṟpiḍi	..	„ hunters
		„ on barbers
		bakers
		braziers
		beggars
		carpenters
		cooks
		dyers
		glassmakers
		jugglers
		metal dealers
		prostitutes
		toddy drawers
		umbrella makers
		washermen

References:—349 of 1905, 300 and 318 of 1909, *A.R.E.*, 1910, part ii, paras 34 and 54, 221 of 1910, *A.R.E.*, 1911, part ii, para 51, 272 and 364 of 1912, 264 of 1914, 46, 48, 140, 386 of 1915, *A.R.E.*, 1916, part ii, para 66, 247 of 1916, *A.R.E.*, 1916, part ii, para 64, 88 of 1921, 10, 45 of 1922, *A.R.E.*, 1922, part ii, para 41, 207, 389 of 1922, 290 of 1925, 491 of 1926; *Ep. Car.*, IV, Guṇḍlupēt 1, *Ep. Car.*, V, Hassan 119.

Note F

THE KAḶAÑJU

The weight of the *kaḷañju*, according to the Government Epigraphist, is 80 gr.* Mac Lean gives it as 82 gr. [*Manual*, s. v. *Calanjy*] Pran Nath [*A Study*, p. 91] has attempted to fix it at 57·6 gr. According to Elliot, the *kaḷañju*, as a measure of weight, is used in the *Kaṇakku Sāram* as equivalent to 10 *paṇattūkkam* or 20 *mañjāḍi*, and as each *mañjāḍi* is commonly reckoned about 4 gr. it may be taken at 80 gr.—though in reality the *mañjāḍi* is somewhat more, from 4½ to 5 grains.†

But *kaḷañju* considered as the unit on which the metrical system of the South was based does not appear to have denoted 80 gr. Elliot himself appears to be aware of this, when he says, "The *kaḷañju* of 10 *mañjāḍi* which we take to be the other normal unit of weight is the name of a prickly climbing species........ It was on these two seminal units the *mañjāḍi* and the *kaḷañju* that the normal metrical system of the South appears to have been founded".‡

Inscriptional evidence shows that *kaḷañju* weighed from 50 to 52 gr.;§ we know from other evidence,|| that

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******South Ind. Inscr.***, III, Index, s. v.* ***Kaḷañju***, **III, p. 236,** ***A.R.E.***, **1913, part ii, para 12. 1** ***kaḷañju*****=20** ***mañjāḍi***.

†Table quoted in Elliot, ***Coins***, **p. 49. Elliot,** ***Coins***, **p. 47.**

‡Elliot, ***Coins***, **p. 48.**

§140 of 1912, ***A.R.E.***, **1913, part ii, para 22. 1** ***māḍai*****=1** ***kaḷañju***. ***Inscriptions of the Pudukōṭṭai State***, **233, 1** ***pon*****=1** ***kaḷañju***. ***Trav. Arch. Series***, **II, p. 146, 10** ***kāṇam*****=1** ***kaḷañju***.

||supra, pp. 711—6.

māḍai and *pon* were generally equivalent to 10 *paṇam* and the *paṇam* was invariably 5·2 grs.¶

As Cunningham says, "As coin the *kaḷañju* was equivalent in value to the gold *hūn*.—on the eastern coast, there was a native gold coin called *kaltis*, from which the merchants derived a profit by giving Roman gold and silver money in exchange. The name seems to be the same as the *kalutti* of Malayalam, the *karanda* of Ceylon and the *kaḷañju* of South India. The seed is used as a weight which is now over 50 gr. Taking this weight as a guide, I have little hesitation in identifying the *kaltis* with the gold *hūn* of South India, which averages about 52 grains."**

In regard to the other estimate of the *kaḷañju* at 57·6 gr. it is probably sufficient to say that the position as stated by the writer himself is not quite convincing. Says he, "For the purpose of calculation, I would rather take it (*kaḷañju*) as weighing 57·6 gr., and in value and metal content exactly the same as the *niṣka* of Bhāskara, which was equal in value to 16 *drammas*.... and 256 copper *paṇas*. The reason for this appears from *the conclusions drawn by Sir Walter Elliot*, who, after examining the weights of ancient South Indian gold coins, remarked that '*They weigh about* 52 *gr.*; evidently derived from the *kaḷañju*, their original name being *pon*, which simply means gold in Tamil, becoming *hon* in Canarese and the origin of the Mahomedan *hun*.' ††"

¶supra, p. 712.

**Cunningham, *Coins*, p. 49, Elliot, *Coins*, p. 48. The *kaḷañju* seeds 'weigh about 40 grs. each, one only reached 42 grs. Mature seeds would probably average from 45 to 50 grs.'

††Pran Nath, *A Study*, p. 91; italics are mine.

In justice to Pran Nath, it must be said, however, that taking the rice corn at a higher average 0·3585 gr. as estimated by Cunningham,‡‡ or taking the *fanam* at 5·85 gr., the weight of one solitary coin—denomination Vīrarāya 5·85 gr.—noticed by Prinsep, *Essays*, II, (Useful Tables), p. 44, it is possible to arrive at 57·6 gr. for the *kaḻañju,* but Cunningham himself seems to have realised that his estimate was a bit high; for he says that the theoretical weight of 57·6 gr. (of the *hun* with which he has equated *kaḻañju*) had dwindled down to 52—53 gr.§§

‡‡Cunningham, *Coins, Numismatic Chronicle,* 1873, p. 197.

§§Cunningham, Coins, p. 51.

CHAPTER VII

Charitable Works, Famines and Poor-relief

Introductory—The basis of poor-relief—Forms of charity described under two heads—i. Unorganized: Brahmans—Ascetics—Watersheds and resthouses—Street beggars—ii. Organized through institutions—Finance—The temple and institutions connected with it: boarding schools and hospitals—The *maṭha*—The almshouse—Miscellaneous points—Famines—Some characteristics—Causes—Symptoms—Results—Help of the State.

Note.—In this chapter an attempt is made to bring together the available facts connected with charitable works, famines and poor-relief. In a sense they all form part of one subject, viz. the problem of rendering help to the needy, 'the needy' being taken not in the sense of the absolutely indigent, but those who were dependent in some measure upon charity. Their connexion with the economic life of the people is too obvious to need any justification for inclusion in this place.

Introductory.

Writing nearly a century ago, Col. Sykes tried to account for the absence of a poor law in India and found an explanation for it "in the universal sentiment of charity which is inculcated both by precept and example in all grades of society......Beggars in India......rarely appeal in vain for alms, indeed they ask with confidence, if not with insolence, knowing the devotional sentiment which inculcates the gift of alms in expiation of sin".[1]

The basis of poor-relief.

The essence of this precept as taught in the *Dharmaśastras* and elaborated in the commentaries is often stated in inscriptions. A verse in the Tiruveḷḷaṟai

[1]Sykes, *Indian Character*, *J.R.A.S.*, 1860, p. 239.

inscription[2] declares that no object in this world is permanent, that life is sure to decay and that therefore if a person commands wealth he must, after taking what is required for his maintenance, utilize the remainder in providing for works of charity.

Expiation of sin, procuring an abode in the world of Śiva,[3] procuring immortality for one's father,[4] or mother,[5] success in combat for oneself,[6] or fear of disgrace,[7] safety at sea,[8] success for the arms of the king, and recovery from illness were among the motives that induced people to start works of charity.

Works of charity had not only to be started, but must be kept going; and the inducement was held out that, of charity, 'if those who may come in the future maintain, half the merit will be theirs';[9] or put differently, it was declared that 'the religious merit of those who make grants and of those who protect them is equal; therefore protect.' A charity if founded even by an enemy was to be assiduously protected; for the enemy alone was an enemy, but 'the charity is nobody's enemy'.[10] It was not essential that there should be male descendants in a family to be eligible to continue the performance of charitable works. We are told that "some of the families....ceased to have male members

[2] *Ep. Ind.*, XI, pp. 157—58.
[3] *Ep. Car.*, VIII, Sorab 475.
[4] *Ep. Ind.*, III, p. 22.
[5] 380 of 1905.
[6] 278 of 1905.
[7] *South Ind. Inscr.*, II, p. 459.
[8] Yule, *Cathay*, IV, p. 120 and Ibn Batuta (Defrēmery), IV, pp. 305—06.
[9] *Ep. Car.*, IV, Chāmarājnagar 60.
[10] *Ep. Ind.*, IV, pp. 53—54.

and that in consequence a question arising as to how the feeding pertaining to these families should be conducted in future; the *Māheśvaras* stated that the feeding stipulated in the grant......devolved on the female descendants as well, and that arrangements were made in accordance with that order."[11]

If the hope of religious merit was insufficient to induce the continuance of charity, curses were invoked: He who should take away land, whether granted by himself or others, had to prepare himself to be "born as a worm in dung for sixty thousand years. One who takes away a single gold piece, a single cow, or a single inch of soil goes to hell, until the dissolution of the universe; they who lay hands upon brāhmaṇic fiefs are born as black snakes lying in withered tree-trunks amidst the waterless wildernesses of the Vindhya."[12]

Certain occasions were specially recommended as being auspicious for beginning works of charity—the day of the Equinox solstices, the day of a lunar or solar eclipse, *sankrānti,* new moon, *Godvādaśi,*[13] etc.

We are not, however, concerned with all forms of charity, such for instance as were made by Śembiyan-Mahādēvi,—"who developed a devout turn of mind and spent large sums of money in renovating ruined temples and constructing new ones in stone, provided the images of gods and goddesses with valuable gold ornaments set with pearls, rubies and diamonds and made gifts of gold and silver utensils to several temples

[11] 1164 A.D.—*South Ind. Inscr.*, III, p. 472.

[12] 1087 A.D.—*Ep. Ind.*, XII, p. 146—Bellary.

[13] *Copper-plate Inscriptions*, p. 59, verse 30, line 71.

for use during the services." [14]—have no direct bearing on the relief of distress. Those forms of charity which had a direct connexion with poverty and distress may be divided under two heads: i unorganized and ii organized charity; the former took the form of gifts to individuals for the asking or on the initiative of the donor, the latter to institutions devoted wholly or partly to helping the poor.

Forms of charity described under two heads.

Of the first class, gifts to Brahmans were highly recommended in the text books of the period. In the language of the *Mitākṣarā* whatever was given to a Brāhmaṇa was to be considered stored as 'a provident fund'; [15] such a statement by itself may be considered unreal, but the idea underlying it was based on the assumption that the donee was to be a pure one: "The Brāhmaṇa who forsakes the rules for receiving gifts becomes a monkey; and the giver becomes a foul-scented jackal in the burning ground." [16] The Brahman donee was to be one who, to keep up his spiritual purity, confined himself to alms alone. [17] Various forms of such gifts are recommended, [18] *hēm-āśva, hēma-garbha, tulā-puruṣa* (weighing oneself against gold and precious stones), *viśva-cakra, brahm-āṇḍa, gō-sahasra, kāma-dhēnu* made of gold, *sapt-āmbhōdhi,* horse chariot made of gold, *mahābhūta-ghaṭa, svarṇa-kṣmā, ratna-dhēnu-kalpaka-vṛkṣa,* etc., many of them being

i. Unorganized: Brahmans.

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[14] *A.R.E.*, 1926, part ii, para 22 for a detailed description.

[15] Vijñānēśvara, *The Mitākṣarā*, i, 315.

[16] *Ep. Car.*, VIII. Sorab 382.

[17] Vijñānēśvara, *The Mitākṣarā*, ii, introduction to verse 114.

[18] *Ep. Ind.*, XVI. pp. 299—300.

based on Hēmādri, the writer of the *Dānakhaṇḍa*. The instruction of this writer finds frequent reference in the records of this period;[19] and that kings, in particular, were delighted to perform such gifts is testified to by the large number of donative inscriptions. Of all gifts, however, land seems to have been the most favoured, for "Land contains jewels, corn, water and cowpens; therefore by making a gift of land one becomes a giver of all these".[20]

Under 'unorganized charity' we may also include the gifts to professed ascetics. Mahuan gives us a picturesque description of some of these: "Here also is another class of men called *Chokis* (yōgi), who lead austere lives like the Taoists of China, but who, however, are married. These men from the time they are born do not have their heads shaved or combed, but plait their hair into several tails, which hang over their shoulders; they wear no clothes, but round their waists they fasten a strip of rattan, over which they hang a piece of white calico; they carry a conch-shell, which they blow as they go along the road; they are accompanied by their wives, who simply wear a small bit of cotton cloth round their loins. Alms of rice and money are given to them by the people whose houses they visit."[21]

Ascetics.

It is interesting to note in this connexion that kings were advised not to be too liberal to mendicant ascetics and those of matted hairs; for "if a king through his partiality for letters gives large sums of money and

[19] *Ep. Car.*, VIII, Tīrthahaḷḷi 12—1405 A.D.

[20] *Ind. Ant.*, XII, p. 123.

[21] Mahuan, *Account*, *J.R.A.S.*, 1896, pp. 343—44.

villages to mendicant ascetics and those of matted hairs, they may (as a result of his benefactions) swerve from their necessary discipline which would increase in the state evils such as famine, disease and infantile mortality. Therefore, in the case of such people, it is sufficient if the king shows *bhakti* (respect and devotion) towards them. The only evil that might then result is their suffering, but no sin would accrue to the sovereign.''[22]

Watersheds and resthouses.

We may also include under this head, gifts to individuals for the maintenance of watersheds[23] and water-troughs for cattle,[24] the provision of rest-houses for travellers,[25] the planting of groves,[26] and the distribution of money on a fixed day every year to a certain number of learned men[27] as well as to street beggars. Water sheds were opened, partly under the belief, it is said, that "the spirit of a dead man is consumed by extraordinary thirst and that it has to be appeased by charities of a watershed, well or tank";[28] they were established near the temples,[29] in the market place[30] or by the roadside; gruel mixed with butter milk

[22]Sarasvati, *Political Maxims*, *J.I.H.*, IV, part iii, p. 69.

[23]*Ep. Car.*, VII, Honnāḷi 18.

[24]*Ep. Car.*, XI, Chaḷḷakere 35 and 36.

[25]72 of 1900.

[26]*Ep. Car.*, III, p. 92.

[27]*Ep. Ind.*, IV, p. 149.

[28]260 of 1915, *A.R.E.*, 1916, part ii, para 14.

[29]323 of 1917.

[30]205 of 1918.

was provided during four months of the year; even betel leaf was provided in some.[31] Similarly the water-troughs for cattle were popular forms of gift, for, according to the *Mahābhārata,* the person in whose tank the thirsty cows, beasts and birds and men drank water obtained the fruit of performing the *Aśvamēdha* sacrifice. An interesting instance of corporate effort in this connexion is supplied by an inscription from Bellary:[32] certain residents of the village gave timber required for baling water to the charity-fountain, on the same day certain salt manufactures agreed to give two *baḻḻas* of salt from each salt-pan to the man who baled out water for the fountain; the smiths, too, who were worshippers of Kāḷikādēvi and Kamaṭhēśvara agreed to repair or renew the iron bucket for drawing water and the *gavuṇḍas* gave a piece of land for the maintenance of the man.

Street beggars.

Of street beggars, little need be said; but some methods employed by them in obtaining alms, however, are interesting by themselves: "When they wished to obtain alms, they took great stones, wherewith they beat upon their shoulders and bellies as though they would slay themselves before them, to hinder which they give them great alms that they may depart in peace"; "others carry knives with which they slash their arms and legs, and to these, too, they give large alms that they may not kill themselves."[33]

[31] *Ep. Car.*, VII, Honnāḷi 18.

[32] 510 of 1914.

[33] Barbosa, *An Account*, I, p. 111.

ii. Organized through institutions.

Organized charity may be described as making provision for the lodging, feeding, clothing or nursing of the needy through institutions—in the main, temples, *maṭhas, sattras* and other alms-houses and hospitals. The funds for the maintenance of these charity institutions came from several sources. Gifts of land,[34] of money[35] and taxes remitted in their favour[36] were among the commonest. Provision was made for the distribution of food daily,[37] once a day,[38] on certain days in the month such as *Ēkādaśi,*[39] *Dvādaśi*[40] and new moon days,[41] on special occasions in the year such as *Śivarātri*[42] festival, *Rōhiṇi,*[43] the birth day of the king[44] and the queen,[45] *Uttarāyaṇa*[46] and *Dakṣiṇāyaṇa,*[47] and on certain festive occasions.[48] A novel method was "to set apart the grain consumed by each family in one day in the year" for purposes of these institutions.[49] Again, lands confiscated from Brahmans[50] went to them

Finance.

34 49 of 1903.
35 140 of 1902.
36 21 of 1900.
37 *Copper-plate Inscriptions*, 1 (1291 A.D.)—*nityānnadāna.*
38 *Ep. Car.*, VIII, Nagar 1.
39 166 of 1902.
40 688 of 1917.
41 220 of 1915.
42 354 of 1916.
43 357 of 1916.
44 404 of 1916.
45 489 of 1925.
46 479 of 1925.
47 479 of 1925.
48 230 of 1903.
49 328 of 1915.
50 718 of 1916.

according to the directions contained in *smṛtis*. Lastly they were reserve recipients of unclaimed property. The following supplies an illustration:[51] "If any one among them died without children, his elder and younger brothers were to have possession. If there were no brothers, his son-in-law and grand children were to have possession. If there were no such relatives, the property was to go to such works of charity as the cultivators decided".

The temple and institutions connected with it: boarding schools and hospitals.

The temple comes first in order of importance among charitable institutions. In dealing with the place of the temple in the village economy[52] we have incidentally indicated its importance in the work of poor-relief. We need only develop it here. In gifts to temples we often find the formula.[53] 'To provide for worship, for gifts of food to the assembly of ascetics and for repairs' which shows that distribution of food was considered one of their normal functions. Generally wayfarers, pilgrims and other devotees, besides many employees of the temple, had their food in the temple and the fare was by no means very sparse, ghee, split pulse, vegetables and buttermilk besides rice being among the dishes served. In the vegetable dishes the necessary condiments such as pepper, pulses, mustard, turmeric, cummin, salt, tamarind etc. were added. On festive occasions[54] curds, plantain-fruits, betel leaves,

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[51] *Ep. Car.*, IX, Nelamangala 12—1330 A.D.

[52] supra, p. 291.

[53] *Ep. Car.*, II, 143—1131 A.D.

[54] *A.R.E.*, 1913, part ii, para 6.

scented dust, sandal etc. were also supplied. And it must be remembered such festive occasions were not rare, every month having generally one such[55] and on some of these occasions cloths were also distributed.

Besides ascetics, devotees and wayfarers and employees, some temples had also a number of residential students in boarding schools attached to them. Examples come from all parts of the country—Kurnool,[56] Guntur,[57] Chingleput,[58] S. Arcot,[59] Mysore[60] and Travancore.[61]

The number of boys maintained varied from 20 to 340; besides there were the teachers who numbered from one to fourteen. Maintenance included lodging, food, clothing, bathing oil, generally once a week, and oil for lamps. Provision was made in such institutions for feeding visitors, the total number maintained in the Eṇṇāyiram school[62] coming to 506, a large number for the period. In these, provision was made for education in the Vēdas, Ṛg, Yajur, and Sāma, Logic, Literature and the *Āgamas,* the *Vyākaraṇas* and *Vēdānta,* and for the teaching of *Karṇāṭa* and such other native tongues.

Some idea of the importance of these institutions may be gathered from the fact that the institution at

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[55] For details, see Subramania Iyer, *Historical Sketches,* pp. 337—38.

[56] 259 of 1905.

[57] 94 of 1917, *A.R.E.,* 1917, part ii, paras 34—36.

[58] 182 of 1915.

[59] 333 of 1917, *A.R.E.,* 1918, part ii, paras 27—29, and 176 of 1919, *A.R.E.,* 1919, part ii, para 18.

[60] *Ep. Car.,* IV, Nāgamangala 20.

[61] *Trav. Arch. Series,* I, i.

[62] 333 of 1917, *A.R.E.,* 1918, part ii, paras 27—29.

Tripurāntakam in the Kurnool district was endowed with the income from 44 villages; another had the income of 45 *vēli* of land[63] and a third at Tribhuvani in S. Arcot had an annual income of 9525 *kalam* of paddy.[64]

Temples had also hospitals attached to them.[65] The best known example of this is the one[66] at Tirumukkūḍal, Chingleput district. The hospital was named Vīṟaśōḷan and provided 15 beds for sick people. The establishment at this hospital consisted of one doctor, in whose family the privilege of administering medicines was hereditary, one surgeon, two servants who fetched drugs, supplied fuel and did other services for the hospital, two maid-servants for nursing the patients and a servant, who did duty also for the school attached to it. The medicines required for one year were stored in the hospital;[67] cow's ghee for preparing medicines and oil for burning one lamp throughout the night were also provided for. The water supplied to patients was scented with cardamon and *khas-khas* roots. These details are interesting as they show the care bestowed in providing for the conveniences of the inmates.

The *maṭha*. The *maṭha*—the monastery—was the second important institution. During the rule of the Cōḷa and Pāṇḍya kings, many new

[63]Ibid.

[64]For details, see *A.R.E.*, 1918, part ii, paras 28—29, and 1919, part ii, para 18.

[65]182 of 1915, *A.R.E.*, 1917, part ii, paras 34—36, 248 of 1923, 112 of 1925, *A.R.E.*, 1925, part ii, para 13.

[66]182 of 1915, *A.R.E.*, 1916, part ii, para 16.

[67]For details, see ibid.

maṭhas were established. The names of some of the *maṭhas* which occur in inscriptions are even now lingering with us—the Śankarācārya *maṭham* at Conjeeveram,[68] Śṛingēri,[69] the Tirunilavitankan, the Gōḷaki-maṭha[70] with branches at Puṣpagiri and Tripurāntakam, Lakuḷīśa maṭha[71] and the Kāḷamukha maṭha.[72] Many of them were sectarian—for Brahmans,[73] Śeṭṭis,[74] Śaivaites,[75] Vaiṣṇavaites,[76] etc. Many of them, too, were subject to some kind of common control, having been established by an order of ascetics;[77] they had also some sort of regulations concerning their discipline, particularly regarding the strict observance of celibacy[78] and the following of ancient customs;[78a] with these we are not primarily concerned. We need only note that many of them were attached to temples and owed their origin to the munificence of private individuals and that, though primarily religious in character, having for aim the provision of a suitable environment for those who devoted themselves to

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[68] *Copper-plate Inscriptions*, 1.

[69] *Ep. Car.*, VI, Śṛingēri Jāgīr 2.

[70] 195 of 1905, 272 of 1905, 209 of 1924, 213 of 1924, *A.R.E.*, 1924, part ii, para 50.

[71] 441 and 443 of 1914, *A.R.E.*, 1915, part ii, para 6.

[72] ibid.

[73] *Ep. Car.*, III, Nañjangūḍ 87.

[74] 391 of 1927.

[75] 282 of 1905, 311 of 1927—*A.R.E.*, 1927, part ii, para 44.

[76] 529 of 1920, *Ep. Car.*, III, Seringapatam 89.

[77] *A.R.E.*, 1924, part ii, para 50.

[78] 443 of 1914, *Ep. Ind.*, XIX, p. 197.

[78a] *Trav. Arch. Series*, III, 8.

religious study and worship, they provided also for educational advancement and poor relief. That *maṭhas* also did the last may be seen from the provision made in many for feeding strangers.[79]

The almshouse.

The third important institution of poor relief was the almshouse known variously as *chatram*,[80] *dharma-chatra*,[81] *śālai*,[82] *satra-śāla*,[83] *aṟaccālai*,[84] *Rāmānuja-kūṭa*,[85] *ūṭṭuppurai*,[86] etc. Some of them were of a sectarian character, being devoted wholly or mainly to feeding Brahmans,[87] Brahmans of a particular sect as Vaiṣṇavas,[88] Jamgams etc.[89]; that there were also others which catered to all without distinction of caste is clear from inscriptions which speak of alms-houses 'for distribution of food to the four castes';[90] one specifically states that arrangements were made for feeding at all times without any obstruction, all (poor)

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[79] 471 of 1912.

[80] *Ep. Car.*, I, 57—1095 A.D.

[81] *Ep. Car.*, X, Mulbāgal 39—1369 A.D.

[82] 266 of 1913, *Trav. Arch. Series*, I, p. 10.

[83] 665 of 1920.

[84] 159 of 1925, *A.R.E.*, 1925, part ii, para 18.

[85] *Ep. Ind.*, IV, p. 6.

[86] *Trav. Arch Series*, II, p. 6.

[87] *Ep. Car.*, I, 57 and 148 of 1913.

[88] *A.R.E.*, 1918, part ii, para 28.

[89] 148 of 1913.

[90] 1220 A.D.—*Ep. Car.*, V, Arsikere 77, 1232 A.D.—*Ep. Car.*, XII, Pāvugaḍa 52, 1261 A.D.—*A.R.E.*, 1917, part ii, paras 34—36, 1482 A.D.—*Ep. Car.*, IV, Chāmrājnagar 185.

people from the Brāhmaṇa down to the Caṇḍāḷa who came and asked for food.[91]

It may be added that in many alms-houses the first preference was for strangers, i.e., those who did not belong to the locality in which the alms-house was situated, as the inscriptions specify, the *Dēśandiri*, *Paradēśi* etc., it being provided that on the days on which no strangers came, those from the locality would be fed;[92] there were some[93] which were open to all, outsiders as well as local people.

The establishment maintained in these alms-houses obviously differed according to the number of persons for whom provision was made by the terms of the endowment. One intended for feeding 32 people, for instance, had one manager, one cook and two maid servants 'to clean up'.[94]

Finally it may be remarked that at least some of them were conducted under government supervision. This applies more particularly to the alms-houses known as *ūṭṭuppuras* on the West Coast; that the kings took some personal interest in seeing them properly managed may be seen from the account given[95] of an early Cēra king, Imayavaramban I, who is said to have urged even the high placed ladies of his household to

[91] *A.R.E.*, 1917, part ii, paras 34—36.

[92] *Ep. Car.*, X, Mulbāgal 122.

[93] 762 of 1916.

[94] *Ep. Car.*, VIII, Tīrthahaḷḷi 33—1430 A.D.

[95] *Trav. Arch. Series*, II, p. 6.

work in the kitchen on an occasion when there was a shortage of hands for adequately supplying the wants of guests.

Miscellaneous points.

The foregoing discussion may be said primarily to apply to the Hindu poor; men of other religions and aliens had also their quota to contribute to the ranks of the beggars. The Mahomedans were entitled to the alms prescribed by their religion; besides, they also procured alms from other religionists;[96] kings are also said to have established feeding houses,—langars,[97]—for them though these catered primarily for the blind and the lame.

Before we pass on to famines we may briefly notice one method adopted by a king to deal with the able bodied poor, though we must hasten to add that it cannot be made the basis for any generalization. "He put chains on the neck of Kullendurs and idle, dissipated vagabonds, whom he punished by employing them in removing filth from the streets, in dragging heavy stones, and in the performance of all manner of laborious work, in order that they might reform, and either earn their livelihood by industry, or quit the country altogether."[98]

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[96] Barbosa, *An Account*, I, p. 111.

[97] 550 of 1925, Ferishta, *History*, II, p. 434.

[98] 1443 A.D., Ferishta, *History*, II, p. 435.

Famines.

The available facts regarding famines in our period[99] may best be brought together in the form of a table:—

Date A.D.	Locality	Some details
1054	Alangudi, Tanjore ..	Failure of rain; the temple helps.
1116-1119	The Dekhan ..	..
1124	Tiruvathūr ..	Severe inundation.
1160	Tirukkaḍayūr, Tanjore,	Drought, failure of crops.
1201	Tiruppamburam, Tanjore ..	Paddy sells at 3 *nāḷi* per *kāśu*; the temple helps.
1241	Tirumangalakkuḍi, Tanjore ..	..
	Nandalūr, Cuddapah ..	Migration of people from the village.
1387-1395	The Dekhan ..	The State helps.
1390-1	Tiruppanangāḍu, North Arcot ..	Want of rain: paddy sell at 10 *nāḷi* per *paṇam*
1391	Tirukkalar, Tanjore ..	..
1396	The Dekhan ..	Depopulation: called Durgādēvi.
1412-1413	The Dekhan ..	State helps by opening the public stores of grain for the use of the poor.
1423	The Dekhan ..	..
1472	The Dekhan ..	Emigration of people to Malwa, etc., accompanied by Cholera; lasted for 2 years.
1509	Kānkānhaḷḷi, Bangalore ..	...

From them we may gather certain characteristic features of famines in mediaeval times. It is sometimes held that 'a total failure is unknown except in single

[99] 5 of 1899, *A.R.E.*, 1899, part ii, para 53. Loveday, *Indian Famines*, p. 135. 276 of 1901. 258 of 1925. 86 of 1911, *A.R.E.*, 1911, part ii, para 29, 225 of 1927. *A.R.E.*, 1908, part ii, para 73. Haig, *Cambridge History*, III, p. 385, 239 of 1906, *A.R.E.*, 1907, part ii, para 533. 649 of 1902. Loch, *Dakhan History, Bombay Gazetteer*, I, part ii, p. 588. Ferishta, *History*, II, p. 405. Haig, *Cambridge History*, III, p. 398. Ferishta, *History*, II, p. 493. Gribble, *A History*, I, p. 122. *Ep. Car.*, IX, Kānkānhaḷḷi 21.

villages or very small districts. In the very worst years, when the crops are everywhere poor and in particular villages totally destroyed, the produce is always equal to 8 or 9 months' consumption and the deficiency is made up by the grain of former years remaining on hand and by importation from the neighbouring provinces where the season may have been more favourable'. While this was probably true in many instances, some cases show that this is not the whole truth. The famine of 1396 A.D. which is said to have affected[100] the whole of the Dekhan seems to have been severe in its effects. During the dreadful famine distinguished from all others by the name 'Durgādēvi', we are told, 'whole districts were entirely depopulated' and the people suffered much.

Some characteristics.

Generally, failure of rain was obviously the cause of famine, whether local in character or wider in its extent; occasionally floods also led to the same result.[101]

Causes.

Whether due to lack or excess of rain, the failure of crops was the first symptom, and the rise in prices followed. In 1390-91 A.D. on the occasion of a famine, we are told, paddy could not be had even at 10 *nāḻi* per *paṇam*.[102] Occasionally the famine was accompanied by epidemics, particularly

Symptoms.

[100] Loch, *Dakhan History*, *Bombay Gazetteer*, I, part ii, p. 588.
[101] 276 of 1901 and supra, p. 748.
[102] 239 of 1906, *A.R.E.*, 1907, part ii, para 53.

cholera, and the effect was seen in the movement of the people[102a] to neighbouring villages or districts where things could be obtained at cheaper rates.[103] Sometimes the people migrated to very distant places such as Malwa, Gujarat, etc. as for instance during the famine of 1472 A.D.[104]

Results.

But such migrations were often only temporary, the people returning to their original homes after a certain period of time. Such temporary internal migration led to changes in ownership of land property and to consequent disputes, and the king had to interfere to set them right.[105] In any case the usual result was that lands lay uncultivated for some considerable period, and scarcity lasted for one to two years, the effects being felt also in the decline in state revenues.[106] The suffering of the people must have been great; we are told the cattle died in large numbers, and men died of hunger; the distress was sometimes so great that people sold themselves and their children. We are told[107] that "they sell their children for 4 or 5 *fanams* each."

What part the state took in relieving distress, can only be gleaned from isolated instances; we cannot prove the existence of any 'famine policy' which guided the Government. One ruler is said to have displayed a

Help of the State.

[102a]Ferishta, *History*, II, p. 493, *A.R.E.*, 1908, part ii, para 73.

[103]*A.R.E.*, 1908, part ii, para 73.

[104]Ferishta, *History*, II, p. 493.

[105]580 of 1907, *A.R.E.*, 1908, part ii, para 73.

[106]1472, Gribble, *A History*, I, p. 122. 1396, Loch, *Dakhan History*, *Bombay Gazetteer*, I, part ii, p. 588.

[107]1201 A.D.—86 of 1911, *A.R.E.*, 1911, part ii, para 29, Barbosa, *An Account*, II, p. 125.

'combination of administrative ability and enlightened compassion' in relieving the distress in famine time; he placed at the disposal of those in charge of relief measures a thousand bullocks belonging to the transport establishment maintained for the court and he 'travelled incessantly to and fro between his dominions and Gujarat and Malwa which had escaped the visitation, bringing thence grain which was sold at low rates in the Dekhan';[108] another is said to have opened the public stores of grain for the use of the poor,[109] and a third[110] to have remitted tolls on grain. These, however, must not be taken as anything more than isolated instances and we cannot yet draw useful generalizations regarding the part played by the state in relieving famine distress.

Among other agencies who took some part in relieving distress we have dealt with the temple;[111] beyond this we have little evidence on the subject.

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[108] Haig, *Cambridge, History*, III, p. 385.

[109] Ferishta, *History*, II, p. 405.

[110] Ferishta, op. cit., I, p. 573.

[111] supra, p. 291; see also *A.R.E.*, 1899, para 58.

CHAPTER VIII

The Standard of Life

Introductory—Two-fold evidence—i. Qualitative: statements of chroniclers and travellers—Life of the upper classes—Of the common people—(a) Housing—(b) Food—(c) Clothing—ii. Quantitative—(a)—Prices—(b) Wages.

Introductory.

We have now examined the main aspects of economic life; it remains to bring together such evidence as is available for estimating the standard of life in the Middle Ages. That evidence is of two kinds. There are, first, general qualitative statements of chroniclers and travellers at different times and places regarding the riches or poverty of the people who came under their observation. Secondly, there are some quantitative estimates of prices of commodities in ordinary use; and some accounts of wages. We should be on our guard, however, against making large inferences from these. It would, for example, be rather too wide of the mark to conclude with the epigraphist that the country was 'prosperous' because "kings could safely turn their attention to sports" like elephant-hunting.[1] The three-fold evidence we have noted above give us only some *indications* of the standard of life of the people.

Two-fold evidence.

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[1]Krishna Sastri, *The First Vijayanagara Dynasty. A.S.I.*, 1907—08, p. 250.

1. Qualitative: statements of chroniclers and travellers.

The statements of chroniclers and travellers relate either to the wealth—what they believed to be the riches—of kings or to the conditions of the country in general. The evidence of Amīr Khusrū,[2] Wassāf[3] and Paes[4] may be examined as regards the former.

When Malik Kafur in the year 1310 A.D. during the reign of Ala-ud Din Khilji of Delhi carried out his successful raids into the Dekhan and to the Malabar coast, sacking the Hindu temples, ravaging the territory of Mysore and despoiling the country, he is said to have returned to Delhi with an amount of treasure that seems almost fabulous. Ferishta writes: "They found in the temples prodigious spoils such as gold adorned with precious stones and other rich effects consecrated to Hindu worship"; and Malik presented his sovereign with "312 elephants, 20,000 horses, 96,000 *mans* of gold, several boxes of jewels and pearls and other precious effects."[5] A thousand camels are said to have groaned under the weight of the treasure carried from Warangal. In Ma'bar, vast treasures were left by the king and 7000 oxen laden with precious metals fell to the share of the brother, and Krishna Rāya is said to have put by every year ten million *pardaos*.

[2]Amīr Khusrū, Elliot, *History*, III, p. 84.

[3]Wassāf, Elliot, *History*, III, p. 34.

[4]Paes, Sewell, op. cit., p. 282.

[5]For an estimate of this in terms of modern currency, see Sewell, (*A Forgotten Empire*, p. 402), who reckons it at 15,672,000 to 2400,000 lbs. weight of gold and cites Colonel Dow to show that the value of the gold carried off by Malik might be put at about a hundred million sterling.

Their statements regarding the conditions of the country in general may be illustrated likewise from Marco Polo,[6] Schiltberger,[7] Varthema[8] and Barbosa[9]:

1293 A.D.—(In the kingdom of Mutfili) the people have great abundance of all the necessaries of life.

1350 A.D.—Vijayanagar is a very rich land well supplied with all good things.

1504 A.D.—The realm is most abundant in everything.

1515 A.D.—Some of them are very rich and well off and have large houses and farms.

Life of the upper classes.

From specific references scattered through these accounts, however, one fact comes out clearly: that there was a small class of people whom we may call the aristocratic class who were very rich and lived a luxurious life. This may be seen partly from their dress: their dress consisted of robes or very beautiful shirts of silk and they wore on their feet shoes or boots with breeches etc.; they wore ear-rings of precious stones set with gold and collars of great price adorned with precious stones. The large number of carpets used to furnish their houses,[10] the conveyances used by them—they (the nobles) were wont to be carried on their silver beds, preceded by some twenty chargers caparisoned in gold, and followed by 300 men on horseback and 500 on foot, and by horn-men, ten torch bearers and ten

[6] Marco Polo, *Travels*, II, p. 361.

[7] Spanish Friar, *Book of knowledge*, p. 42.

[8] Varthema, *Travels*, p. 118.

[9] Barbosa, *An Account*, I, pp. 195—97, II. p. 65.

[10] Vasco Da Gama, *The First Voyage*, pp. 51, 60, 63, 113.

musicians—,[11] the 'very beautiful' houses in which they lived[12] and the number of household servants in attendance on them going up to 250 all seem to bring out this fact clearly. Indeed the grandeur of the nobles and men of rank, Paes despaired of describing, for he was afraid he would not be believed if he tried to do so: "the chiefs are so wealthy."[13]

Of the common people.

We are more interested, however, in understanding the conditions of life of the ordinary people; and the evidence on this head can be divided under three heads, housing, food and dress.

(a) Housing.

As to housing, in the cities one could meet with 'good houses' built of stone and mortar;[14] but in the villages, we can only say that houses as small in size as 6 cubits wide and 20 cubits long did exist,[15] though larger ones[16] could be met with; while the houses of the lowest class of people were not more than three feet high.[17] Of construction we are told few details except isolated observations such as that the wood of the cocoa-nut tree was utilized where it was available, especially in the coastal strips;[18] in the Coromandel the wood of the red sandalwood was used.[18a] Stone and mortar were used too.[19] Tiles do

[11] Nikitin, Major, *India*, p. 14.

[12] Varthema, *Travels*, pp. 117—18; italics are mine.

[13] Nuniz, Sewell, *A Forgotten Empire*, p. 278.

[14] Vasco Da Gama, *The First Voyage*, pp. 126 and 136.

[15] *Ep. Car.*, IV, Yeḷandūr 39—1328 A.D.

[16] ibid.

[17] 1409 A.D.—Mahuan, *Account*, *J.R.A.S.*, 1896, p. 343.

[18] Mahuan, *Account*, *J.R.A.S.*, 1896, p. 342. Barbosa, *An Account*, II, p. 91.

[18a] Stefano, Major, *India*, p. 5.

[19] Houses are made in layers of black stones: *Tao i chih lio*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 465; see also Vasco Da Gama, *The First Voyage*, pp. 126 and 136.

not appear to have come to very general use, though the houses of the richer classes are said to have been tiled;[20] the reason suggested is interesting:—"Nor indeed in all Malabar can any one roof them so (with tiles), however great a Lord he may be; for forthwith the Moors would rise against him, save only if it be a House of Prayer or a king's Palace";[21] many houses were roofed with bricks,[22] forming a terrace and others were thatched with leaves of the cocoanut or with straw.

As to the quality of the houses built, opinions differ; for to some they appeared watertight[23] and well-built;[24] to others they appeared wretched.[25] This only illustrates the proposition that generalizations on this subject must be made with more than usual caution.[26]

(b) Food.

The evidence regarding food is more plentiful, though not quite conclusive.[27] We are told that the people were dainty in their diet and that they had a hundred ways of cooking their food which varied every day; in their

[20]Kerr, *A General History*, II, p. 347.

[21]Barbosa, *An Account*, II, p. 6.

[22]ibid., pp. 56—57.

[23]Mahuan, *Account*, *J.R.A.S.*, 1896, p. 342.

[24]Barbosa, *An Account*, I, p. 202.

[25]John of Monte Corvino, Yule, *Cathay*, III, p. 61.

[26]Chablani, *Economic Condition*, pp. 103—07, who, in his anxiety to refute Moreland, seems to be more an advocate than a judge in the selection of facts.

[27]Chau Ju-Kua, *Chu-fan-chï*, p. 88, Marco Polo, *Travels*, II, pp. 341—42, 360, 'Abdu-r Razzāk, Elliot, *History*, IV, p. 113, Rockhill, *Notes*, *T'oung Pao*, XVI, pp. 447 ff., Barbosa, *An Account*, I, p. 112, 217. Paes, Sewell, op. cit., p. 242.

daily diet they used much butter which they mixed with rice; milk, butter, sugar, rice, and many conserves of divers sorts, dishes of fruits and vegetables entered in their diet in varying degrees. The custom of the country was 'to serve sour milk after the meal'—Ibn Batuta's term for butter milk; and betel leaf and arecanut gave the finishing touch. The last was almost universally used : " They always eat this leaf and carry it in their mouths with another fruit called areca. This is very good for the breath and has many other virtues." Fruits such as oranges, lemons, citron, very good melons, dates, fresh and dried, and great variety of other kinds of fruits also entered the diet of the middle class people.

Flesh was not tabooed. Some ate flesh and fish.

They ate all kinds except beef and pork—such as sheep goats, fowls, hares, partridges, and other birds. The reason for avoiding beef is succinctly stated by Montecorvino: Oxen are with these people sacred animals and they eat not their flesh for the worship they bear them.

The diet of the average Moor is said to have been generally of a good quality, consisting, as it did, of good wheaten bread, rice and very good flesh meat.

(c) Clothing.

The evidence regarding dress is supplied by the same travellers, and the general impression left by them almost without exception is the insufficiency of clothing. This idea is sought to be conveyed by them by the use of the expression 'naked'; and the constant use of this has made it almost a "tradition" of the 'nakedness of the

South.' Odoric may be cited as an example:[28] Here all the people go naked, only they wear a cloth just enough to cover their nakedness, which they tie behind, and, in thus stating the position, he is supported almost in very similar terms by Marignolli,[29] Marco Polo,[30] Jordanus,[31] 'Abdu-r Razzāk,[32] Nicolo Conti,[33] Vasco Da Gama,[34] Varthema[35] and Barbosa,[36] though they differ in some details. These differences are with reference to (i) the head dress, (ii) cover for the upper part of the body and for (iii) the leg. The *Chatys,* we are told, went "naked from the waist up and below gather round them long garments many yards in length, little turbans on their heads and long hair gathered under the turban"; the Pardesis were well clad and decked in garments of silk, scarlet-in-grain camlets, cotton, and *turbans* twisted round their heads; "they go bare from the waist, but are clad below; they wear small turbans on their heads."

So too regarding the upper part of the body; the Moors are said to have dressed themselves according to their custom in Jibbi and 'balandran'; others are said to have worn shirts, long shirts, and cloaks 'thrown over the shoulders.'[37]

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[28] Odoric, Yule, *Cathay,* II, p. 137.

[29] Marignolli, Yule, *Cathay,* III, p. 256.

[30] Marco Polo, *Travels,* II, p. 338.

[31] Jordanus, *Wonders,* p. 32.

[32] 'Abdu-r Razzāk, Elliot, *History,* IV, p. 109.

[33] Conti, Major, *India,* p. 22.

[34] Vasco Da Gama, *The First Voyage,* pp. 133—34.

[35] Varthema, *Travels,* p. 109.

[36] Barbosa, *An Account,* I, p. 205 ff.

[37] *Hsing ch'a shēng lan,* Rockhill, *Notes, T'oung Pao,* XVI, p. 461, Barbosa, *An Account,* I, p. 205.

Again regarding foot wear, in Quilon they wore red leather shoes;[38] Nicolo Conti says that though they did not generally wear shoes, they wore sandals with purple and golden ties, and Paes, and Barbosa support this.

This is a bare summary of a long chain of authorities generally quoted to substantiate the 'tradition of the nakedness of the south';[39] but we note a divergence of what it exactly meant even to the contemporary writers, whose statements are quoted in support of such a 'tradition'. In view of these divergences, it appears to me that the following conclusions are warranted by their evidence: i. In comparison with the conditions to which the travellers were accustomed, the people of South India had much less clothing. ii. It is also clear that none of the travellers attribute this insufficiency of clothing to poverty. They are, on the other hand, careful to explain that it was due to the "great heat".[40] The same is also brought out by frequent statements as the following:[41] "The king and the beggar both go about in the same way"—a way of saying that too much of dress was not a pleasure in this climate. But the quality of dress did matter, as Vasco Da Gama puts it, "the richer men dress in the same manner"[41a] (avoiding dress above the waist) "but they made use of silk stuffs, reddish or scarlet or of other colours as seems good to them".

[38]Quotation from the *Ling-wai-tai-ta*, Chau Ju-Kua, *Chu-fan-chï*, p. 91 n. 17.

[39]See also Moreland, *India*, p. 274.

[40]Conti, Major, *India*, p. 22.

[41]Mahuan, *Account*, *J.R.A.S.*, 1896, p. 342, Barbosa, *An Account*, II, p. 7.

[41a]Vasco Da Gama, *The First Voyage*, p. 133.

The point is clear therefore that 'nakedness' was used by the travellers to indicate a way of dressing which appeared so different from their experiences, and it is quite natural that they should make note of whatever they found 'curious' in their eyes—as indeed one writer even mentions, "*the natives did not eat with the left hand*".[42]

This review of evidence on the subject is not meant to suggest that there was no insufficiency or that everybody had plenty of clothing: it is possible, as even now is the case—that many had not the bare minimum of clothing required for decent living even in a hot climate, but what has been attempted here is merely to place the accounts of the travellers in their proper setting, and to show also (i) that the statements were quite natural for strangers from other lands to make, (ii) and that there is not much evidence to show that the travellers believed that the insufficiency of clothing was due to a low standard of economic life.

There is one definite error, however, which we wish to refute viz. the citation of the absence of any demand for stitched cloths, and the consequent absence of tailors as a proof to a low standard of living. This, as we pointed out earlier, is in part the outcome of ignoring one class of evidence, the epigraphic. Travellers indeed remark that "in all the province of Maabar there is never a tailor to cut a coat or stitch it";[42a] or "they use neither needless nor thread, nor do they even spin thread";[43] but such statements must

[42]Marco Polo, *Travels*, II, p. 342; italics are mine.

[42a]Marco Polo, *Travels*, II, p. 338.

[43]*Tao i chih lio*, 60, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 464.

be taken as statements made on insufficient knowledge of the country. References to shirts and cloaks, the mention of tailors in inscriptions[44] of 1011 A.D.[45] and 1139 A.D.[46] and in the literature of the period[47] would be sufficient to show that the statements of travellers in this respect must be rejected as generalizations based on inadequate observation.

So far we have been concerned with the first class of evidence on this subject viz. the general qualitative statements of travellers on the standard of life. The next is the quantitative statements of prices and wages. The available prices of commodities have been tabulated in Appendix viii; here a few salient points may be noticed. First we may remark that we have taken into account only such prices as are expressed in units of reckoning, the value of which is known with some certainty; for this reason we have left out of account all prices expressed in terms of *kāśu*. The three units of which we have some clear notions are the *kaḻañju* and the *gadyāṇa* and the *kalam* of paddy;[48] the *kaḻañju* of gold whose weight was 52 gr. has been taken at 4|9 of a sovereign and at the exchange ratio of 1s. 6d. its value in terms of modern currency would be about Rs. 6; the *gadyāṇa*, whose weight was on the average above 60 gr., has been

ii. Quantitative.

(a) Prices.

[44] supra, p. 455; see for mention of shirts, *Hsing ch'a shêng, lan*, Rockhill, *Notes*, *T'oung Pao*, XVI, p. 461.

[45] *South Ind. Inscr.*, II, 66, sect. 499 *tayyān*.

[46] *Ep. Car.*, V, Bēlūr 236—1139 A.D.

[47] Mērutunga, *Prabandhacintāmaṇi*, p. 45. Vijñānēśvara, *The Mitākṣarā*, i, 163—Tailor is one who subsists by needle work.

[48] supra, ch. VI, sect. (4).

taken at half a sovereign and its value in modern rupee currency Rs. 6|10. The *kalam* of paddy in the eleventh century has been taken to be equivalent to half a rupee. On this calculation, a *kaḻañju* valued at Rs. 6 could purchase in Tanjore in the eleventh century from 10 to 18 *kalam* of paddy[49] and on the average may be taken at 12 *kalam*; hence a *kalam* may be taken at half a rupee. For conversion into lbs. a *nāḻi* or *paḍi* has been taken to be 3.9 lbs, viss 3 lbs, 1 *palam* 3|40 lb., *kalam* 375 lbs., *solagu* 329 lbs. and *kolaga* 16·5 lbs.

A study of the statistics tells us that a rupee in modern currency could purchase—

1101	Tanjore	625 or more lbs. of paddy	as against	36	today[50]
,,	,,	24 lbs. of ghee	,,	1	,,
,,	,,	750 lbs. of salt	,,	39	,,
,,	,,	250 lbs. of dhall	,,	15·6	,,
,,	,,	23·4 lbs. of pepper	,,	3·9	,,
,,	,,	24 lbs. mustard	,,	7	,,
,,	,,	17·5 cummin	,,	2·4	,,
,,	,,	115 lbs. tamarind	,,	13	,,
1071	Kōlār	46·8 lbs. oil	,,	4	,

These results would appear to substantiate the remarks of travellers[51] about the abundance and cheapness of commodities in the country. Some of these remarks are interesting and may be quoted.

[49] See Nos. 3, 16, 17, 19, 20, 22; No. 2 is an exception.

[50] see Appendix viii.

[51] Chau Ju-Kua, *Chu-fan-chi*, p. 88, Marco Polo, *Travels*, II, p. 361, Spanish Friar, *Book of Knowledge*, p. 42, Nikitin, Major, *India*, p. 20, Vasco Da Gama, *The First Voyage*, p. 132, Barbosa, *An Account*, I, pp. 195—97, Paes, Sewell, *A Forgotten Empire*, pp. 257—59.

XIII C.—Chau Ju-Kua: Rice, hemp, beans, wheat, millet, tubers and green vegetables supply their food; they are abundant and cheap.

1293 A.D.—Marco Polo: The people have great abundance of all the necessaries of life.

A.C. 1350—Schiltberger: Vijayanagar is a very rich land well supplied with all good things.

1471 A.D.—Nikitin: Everything (here) is cheap.

1499.—Vasco Da Gama: Corn in abundance is found in this city of Chalichut...... For 3 *reals* (less than a penny)...... bread sufficient for the daily sustenance of a man can be purchased.... Rice, likewise, is found in abundance ......a very fine shirt which in Portugal fetches 300 *reis* was worth here only two *fanaos* which is equivalent to 30 *reis*.

1516.—Barbosa: Rice was good and cheap at Mangalore and Curimbola.

1520.—Paes: Vijayanagar is the best provided city in the world and stocked with provisions such as rice, wheat, grains, India corn and a certain amount of barley and beans, moong, pulses, horses gram and many other seeds which grow in this country which are the food of the people and there is a large store of these and very cheap.

(b) The evidence relating to wages is almost wholly derived from those of temple servants. We should have dismissed such evidence as of little value for an understanding of the general standard of life but for the fact that such servants were drawn from various classes in the country and in the middle ages every one compared his own standard of comfort with that of the class or caste to which he belonged.

(b) Wages.

The temple servants seem to have been paid in several ways in land, in paddy or in cash or a mixture of one or more of these. If it was land it varied from land yielding 40 *kalam* to 200.[52] Thus the parasol-keeper had ⅖ *vēli* of land yielding 40 *kalam*; the drummer, the sprinkler of water, the lamplighter, the subordinate astrologer, the barber etc. had ½ *vēli* yielding 50 *kalam*; the musician, assistant carpenter etc. had ¾ yielding 75; the conch-proclaimer, the head potter, the washerman, the astrologer, the tailor, the brazier, the superintending goldsmith, all had 1 *veli* each, yielding 100 *kalam*; the assistant accountant, the senior drummer, the jewel stitcher, the master carpenter, etc. had 1½ yielding 150 *kalam* and the accountant and the superintendent of female musicians had two *vēli*, yielding 200 *kalam* of paddy.

Where the wage was paid in paddy, the variation was somewhat similar; where it was paid in cash from 4 to 12 *gadyāṇa*. Instances where cash and paddy

[52] e. g. Venkayya, *Irrigation, A.S.I.*, 1903—04, p. 207 n. 2, *South Ind. Inscr.*, II, 66, *South Ind. Inscr.*, III, 4, *Ep. Car.*, X, Kōlār 106 d.—1071 A.D., *Ep. Ind.*, V, pp. 142—50—1213—14 A.D., Chēbrōlu in the Krishna district.

or cash and food were combined also occur. The former is illustrated by an inscription from North Arcot:[53] while those who wrote accounts received for maintenance four *nāḷi* of paddy every day and seven *kaḷañju* of pure gold every year and a pair of cloths, the latter, by one from Trichinopoly where one reciter was paid 1¼ *kaḷañju* of gold in addition to food.

Admittedly our evidence is one-sided and incomplete; and we are not in a position to determine the relation between wage rates and the standard of living. It may be observed, however, that as these rates are seen to have varied within the narrow range of 40 to 200 *kalam* in paddy, wide divergencies in the remuneration of different classes of labour were unknown; and considering the low level of commodity prices in general, we may believe that the wage rates were not inadequate to meet the rather low standard of requirements then prevailing.

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[53]226 of 1915, *A.R.E.*, 1916, part ii, para 8.

Appendices

i. Chronological List of Chronicles and Travellers' Accounts*

Date A.D.		Short Title
1st Century	..	Periplus (Schoff).
Circa 545	..	Cosmas, Yule, *Cathay*, I.
851	..	Sulaimān, Elliot, *History*, I, Renaudot, *Ancient Accounts.*
864	..	Ibn Khurdādba, Elliot, *History*, I, *Routes.*
867	..	Abū Zaid, Elliot, *History*, I, Renaudot, *Ancient Accounts.*
951	..	Al Istakhrī, Elliot, *History*, I.
957	..	Al Mas'ūdi, Elliot, *History*, I.
976	..	Ibn Haukal, Elliot, *History*, I.
11th Century	..	P'ing-chōu-k'o-t'an, Chau Ju-Kua.
"	..	Jayamkoṇḍar, *Kalingattupparaṇi.*
"	..	Oṭṭakūttan, *Kulōttunga-Cōḻan-piḷḷai-tamiḻ.*
"	..	Oṭṭakūttan, *Kulōttunga-Cōḻan-ulā.*
"	..	Oṭṭakūttan, *Rājarāja-Cōḻan-ulā.*
"	..	Oṭṭakūttan, *Takkayāgapparaṇi.*
"	..	Oṭṭakūttan, *Vikrama-Cōḻan-ulā.*
1030	..	Alberuni, *India.*
1076–1126	..	Bilhaṇa, *Vikramānkadēva Caritam.*
End of 11th and beginning of 12th Century	..	Al Idrīsi, Elliot, *History*, I.
Circa 1120	..	Rājāditya, *Vyavahāragaṇitam.*
1159–60 ?	..	Benjamin, Major, *India.*

*See List of Authorities iii and iv for fuller titles of works cited.

Date A.D.	Short Title
Middle of the 13th Century ..	Chau Ju-Kua, *Chu-fan-chï.*
1253–55 ..	William of Rubruck, *Journey.*
1253–1325 ..	Amīr Khusrū, Elliot, *History,* III.
1263–75 ..	Al Kazwīnī, Elliot, *History,* I.
1293 ..	Marco Polo, *Travels.*
1273–1331 ..	Aboulfeda, *Gèographie.*
1297–1348 ..	Ahmad, Elliot, *History,* III.
1300 ? ..	Rashīdu-d Dīn, Elliot, *History,* I, Elliot, *History,* III.
1305–06 ..	John of Montecorvino, Yule, *Cathay,* III.
1321–22 ..	Odoric, Yule, *Cathay,* II.
1324–47 ..	Ibn Batuta (*Broadway Travellers*), (Defrēmery), (Lee), (Yule).
1328 ..	Wassāf, Elliot, *History,* III.
Circa 1330 ..	Archbishop of Soltania, Yule, *Cathay,* III.
Circa 1330 ..	Jordanus, *Wonders,* Yule, *Cathay,* III.
1338 ..	Pascal, Yule, *Cathay,* III.
1338–53 ..	Marignolli, Yule, *Cathay,* III.
1349 ..	Wang Ta-Yüan, Rockhill, *Notes, T'oung Pao,* XVI.
Middle of the 14th Century ..	Spanish Friar, *Book of Knowledge.*
1396–1427 ..	Schiltberger, *Bondage and Travels.*
1420 ..	Conti, Major, *India.*
1425–32 ..	Mahuan, *Account, J.R.A.S.*, 1896, Rockhill, *Notes, T'oung Pao,* XVI.
1436 ..	Fei Hsin, Rockhill, *Notes, T'oung Pao,* XVI.

Date A.D.		Short Title
1442–44	..	'Abdu-r Razzāk, Elliot, *History,* III, Major, *India.*
1470–74	..	Nikitin, Major, *India.*
1497–99	..	Vasco Da Gama, *The First Voyage.*
1497–1524	..	Vasco Da Gama, *The Three Voyages.*
1499	..	Stefano, Major, *India.*
1503–08	..	Varthema, *Travels, Travels* [Temple].
1510	..	Albuquerque, *Commentaries.*
1518	..	Barbosa, *An Account.*
1520	..	Huang Shēng-ts 'ēng, Rockhill, *Notes. T'oung Pao,* XVI.
1520–22	..	Paes, Sewell, *A Forgotten Empire.*
1534 ?	..	Orta, *The Simples and Drugs.*
1535–37	..	Nuniz, Sewell, *A Forgotten Empire.*
1552–63	..	Barros, *Decadas.*
1554	..	Sīdī Alī, *The Mohit.*
16th Century	..	Zeen-ud-deen, *Tahafat-ul-Mujahidīn.* do. [unpublished.]
Circa 1631	..	Asad Beg, Elliot, *History,* VI.

ii. Price of Land [arranged date-war]

Note.—Only dated inscriptions are noticed.

No.	Reference	Date A.D.	Place	Area of land	Price	Price per acre	Remarks
1	*Ep. Ind.*, XII, p. 122.	962	Tanjore ..	½ *vēli* ..	156 *kaḻañju* in gold.	£14–5–0	
2	298 of 1927 ..	989	Tanjore ..	1 *vēli* and odd ..	25747 *kāśu* ..		
3	277 of 1925 ..	993	Tanjore ..	¼ *vēli* ..	20750 *kāśu* ..		
4	*South Ind. Inscr.*, III, 19.	999	N. Arcot .	1000 *kuḻi* ..	15 *kaḻañju* gold ..	£2–0–4	
5	218 of 1911 ..	999	Tanjore .	1½ *vēli* ..	101 *kaḻañju*, 6 *mā* and 1 *kāṇi* ..	£10–3–8	
6	112 of 1911 ..	999	Tanjore ..	..	..	..	By public auction.
7	*South Ind. Inscr.*, II, 4.	1011	Tanjore ..	..	..	..	cf. sections 12 & 13.

No.	Reference	Date A.D.	Place	Area of land	Price	Price per acre	Remarks
8	*Inscriptions of the Pudukkōṭṭai State*, 90.	1013	Pudukkōṭṭai ..	$18\frac{3}{8}$ *mā* ..	5 *kāśu* ..	..	
9	506 of 1905 ..	1014	N. Arcot ..	1-2|20 *vēli* ..	2125 *kāśu* ..	..	Dry land.
10	248 of 1923, *A. R. E.*, 1924, part ii, para 14.	1017	Tanjore ..	9 *mā* ..	70 *kāśu* ..	..	
11	*South Ind. Inscr.*, III, 5 ..	1018	N. Arcot ..	2000 *kuḻi* ..	50 *kāśu* ..	..	
12	522 of 1922, *A. R. E.*, 1923, part ii, para 45.	1034	Tanjore ..	$1\frac{1}{4}$ *vēli* and 1 *mā*.	5350 *kāśu* or 13 *kaḻañju*.	0–9–9	
13	23 of 1921 ..	1034	Chingleput ..	1 *tūṇi* ..	129 *kaḻañju* of gold.	..	
14	156 of 1912, *A. R. E.*, 1913, part ii, para 22.	1044	Chingleput ..	250 *kuḻi* ..	1 *māḍai* ..	..	
15	*Inscriptions of the Pudukkōṭṭai State*, 202.	1046	Pudukkōṭṭai ..	5 *mā* and 3 *kāṇi*.	200 *kāśu* ..	..	

16	194 of 1925 ..	1059	Tanjore ..	$2\frac{1}{2}$ *vēli* ..	200 *kāśu* ..	..	In addition to 200 *kāśu*, $1\frac{1}{4}$ *vēli* of land also appears to have been given.
17	87 of 1925 ..	1070	Tanjore ..	100 *kuḻi* ..	200 *kāśu* ..	..	Dry.
18	88 of 1925 ..	1070	Tanjore ..	98 *kuḻi* ..	196 *kāśu* ..	..	
19	131 of 1912, *A. R. E.*, 1913, part ii, para 33.	1072	Chingleput ..	1 *vēli* ..	20 *kāśu* ..	..	
20	*South Ind. Inscr.*, III, 68.	1075	Chingleput ..	2000 *kuḻi* ..	11 *kaḻañju* gold..	..	*kuḻi* measured by the rod of 16 spans.
21	*South Ind. Inscr.*, III, 71.	1090	Trichinopoly ..	1|20 *vēli* ..	1 *kāśu* ..	..	
22	671 of 1919 ..	1094	Tanjore ..	450 *kuḻi* ..	3 *kaḻañju*, 1 *mañjāḍi* and 1 *kunṟi* of gold..	£2–13–9	
23	*Ep. Car.*, X, Mulbāgal 42i.	1100	Kōlār ..	3000 *kuḻi* ..	2 *kaḻañju* of gold.	..	
24	150 of 1925 ..	1112	Tanjore ..	6 *mā* .	37 *kāśu* ..	..	
25	*South Ind. Inscr.*, III, 76.	1117	Trichinopoly ..	$4\frac{3}{4}$ *vēli* ..	4-1|20, 1|80 *kāśu*.	..	
26	243 of 1923 ..	1118	Tanjore ..	$10\frac{1}{2}$ *mā* ..	12 *kāśu* ..	..	

No.	Reference	Date A.D.	Place	Area of land	Price	Price per acre	Remarks
27	*Ep. Car.*, III, Tirumukūḍal-Narsīpūr 15.	? 1120	Narsīpūr ..	2357 poles of 16 spans each.	12 half pagoda (*māḍai*).	..	
28	88 of 1900, *A.R.E.*, 1900, para 24.	1126	N. Arcot .	4250 *kuḷi* ..	20 *kāśu* ..	..	Dry.
29	348 of 1921 ..	1130	S. Arcot ..	1000 *kuḷi* ..	17 *kāśu* ..	..	
30	509 of 1912, *A. R. E.*, 1913, part ii, para 34.	1133	Trichinopoly ..	4 *vēli* ..	90 *kāśu* ..	£1–2–4	90 *kāśu* = 67½ *kaḻañju* of gold.
31	504 of 1918 ..	1148	Tanjore ..	6 *mā* ..	2000 *kāśu* ..	..	
32	505 of 1918 ..	1148	Tanjore ..	6 *mā* ..	2000 *kāśu* .	..	”
33	96 of 1926 ..	1158	Tanjore ..	119 *kuḷi* ..	1904 *kāśu* ..	..	House site.
34	261 of 1913 ..	1184	S. Arcot ..	9 *mā* ..	5000 *kāśu* ..	..	
35	87 of 1900, *A.R.E.*, 1900, para 24.	7th year of Vikrama Cōḷa	N. Arcot ..	2000 *kuḷi* ..	25 *kāśu* ..	..	
36	85 of 1925 ..	1186	Tanjore ..	105 *kuḷi* ..	210 *kāśu* ..	..	Dry.
37	86 of 1925 ..	1186	Tanjore ..	130 *kuḷi* ..	260 *kāśu* ..	..	Dry.
38	83 of 1925 ..	1188	Tanjore ..	115 *kuḷi* ..	690 *kāśu* ..	..	Dry.

39	84 of 1925 ..	1188	Tanjore ..	50 *kuḻi* ..	250 *kāśu* ..	..	
40	82 of 1925 ..	1189	Tanjore ..	120 *kuḻi* ..	360 *kāśu* ..	..	
41	81 of 1925 ..	1193	Tanjore ..	75 *kuḻi* ..	300 *kāśu* ..	..	
42	*South Ind. Inscr.*, III, 24.	1203	Coimbatore ..	1/40 *vēli* ..	3 *kaḻañju* ..	£8–1–4	
43	202 of 1912, *A. R. E.*, 1913, part ii, para 39.	1213	Chingleput ..	80 *vēli* ..	200 *kāśu* ..	..	
44	*Inscriptions of the Pudukkōṭṭai State*, 266.	1222	Pudukkōṭṭai ..	320 *kuḻi* by 16 ft. rod.	1260 current *kaḻañju*.	£529–7–0	Doubtful, *kaḻañju* =*pon?*
45	*A.R.M.*, 1924, 26.	1226	Mysore ..	Land of 10 *salage* sowing capacity.	18 *gadayāṇa* ..	..	
46	246 of 1917, *A. R. E.*, 1918, part ii, para 41.	1236	Tanjore ..	5 *vēli*, 3 *mā*, $1\frac{1}{3}$ *kāṇi* and 1 *mundiri kīḻ* 4 *mā*.	20700 *kāśu* ..	..	
47	247 of 1917, *A. R. E.*, 1918, part ii, para 41.	1236	Tanjore ..	2 *vēli*, $8\frac{1}{2}$ *mā*, $\frac{1}{2}$ *kāni*, *mundirigai*. *kīḻ*. half and 2 *mā*.	10000 *kāśu* .	..	
48	545 cf 1921 ..	1249	S. Arcot ..	60 *mā* ..	120000 *kāśu* ..	..	
49	278 of 1923, *A. R. E.*, 1924, part ii, para 24.	1250	Tanjore ..	118 *kuḻi* ..	4000 *kāśu* ..	..	

No.	Reference	Date A.D.	Place	Area of land	Price	Price per acre	Remarks
50	*Inscriptions of the Pudukkōṭṭai State*, 375.	1253	Pudukkōṭṭai ..	3 *vēli* ..	64000 *kāśu* ..	..	
51	*Inscriptions of the Pudukkōṭṭai State*, 666.	1255	Pudukkōṭṭai ..	12 *mā* ..	14000 current coins?	..	"With trees, wells and tank".
52	483 of 1919 ..	1261	Chingleput ..	1 *vēli* ..	200 *pon* ..	£13–8–11	
53	334 of 1925 ..	1263	Tanjore ..	568 *mā* ..	1500 *paṇam* ..	..	
54	*Inscriptions of the Pudukkōṭṭai State*, 377.	1269	Pudukkōṭṭai ..	500 *kuḻi* ..	500 current *kāśu*.	..	
55	*A.R.M.*, 1924, 32.	1285	Mysore ..	Land containing 210 arecanut trees.	3 *gadyāṇa* ..	..	
56	*South Ind. Inscr.*, I, 52.	1339	Velūr ..	1 *kāṇi* ..	170 *paṇa* ..	£5–14–5	
57	*Ep. Car.*, VII, Shikārpur 282.	1368	Shimoga ..	..	..	..	5 times the value of the annual rent.
58	*Ep. Car.*, VIII, Tīrthahaḷḷi 190.	1407	Shimoga ..	..	..	..	3 *ga* for land yielding 1 *ga*.

59	*Ep. Car.*, VIII, Tīrthahaḷḷi 134.	1409	Shimoga ..	..	..	..	Price fixed by arbitrators.
60	*Ep. Car.*, VIII, Tīrthahaḷḷi 176.	1415	Shimoga ..	1 *khaṇḍuga* ..	15 *haṇa* ..	..	
61	*Arch. Surv. Southern India*, IV, p. 149.	1427	Chingleput ..	1925 *kuḷi* ..	125 pagoda ..	£2–3–8	*kuḷi* measured by the measuring rod of 32 feet.
62	*Arch. Surv. Southern India*, IV, p. 151.	1429	Chingleput ..	2000 *kuḷi* ..	115 pagoda ..	£1–18–8	*kuḷi* by the measuring rod of 32 feet.
63	*Arch. Surv. Southern India*, IV, p. 154.	1456	Chingleput ..	12500 *kuḷi* ..	750 pagoda ..	£2–0–4	*kuḷi* by the measuring rod of 48 feet.
64	27 and 28 of 1912.	1446	Tinnevelly ..	2 *mā* ..	630 *paṇam* ..	..	
65	*Ep. Car.* III, Seringapatam, 89.	1458	Mysore ..	Land yielding 40 pagoda.	400 pagoda	..	
66	*Ep. Car.*, VI, Koppa 21.	1509	Mysore ..	30 *khaṇḍi* of land.	120 *gadyāṇa* ..	..	
67	*Ep. Car.*, VI, Sringēri Jāgīr 21.	1524	Sringēri ..	..	..	..	Money raised on the security of certain lands and paid to certain mortgage holders.

iii. The Ayyāvoḷe.

Reference	Place.	Date. A.D.	Purpose of meeting	Remarks
Ind. Ant., VI, p. 138 *n.*	Aihoḷe ..	8th century.	..	..
Ep. Car., I, 4 ..	Coorg ..	978	..	guardians of gift.
321 of 1912 ..	Karshaṇapalle, Chittoor.	1011	..	an Eṟivīrapaṭṭaṇa.
256 of 1912, *A.R.E.*, 1913, part ii, para 25.	Kāṭṭūr, Chingleput.	1025	to declare Kāṭṭūr a Vīrapaṭṭaṇa, and to lay down certain rules of conduct to be followed by members of the Vaḷañjika sect.	..
A.R.E., 1913, part ii, para 25, 342 of 1912..	Basinikoṇḍa, Chittoor.	1050	to declare Śīravaḷḷi a Nānādēśiya - daśamaḍi - eṟivīrapaṭṭaṇa, and to confer some privileges on the residents of that town.	met at Śīrvaḷḷi; consisted of 1500 representatives.
Ind. Ant., V, pp. 342-45.	Baḷagāmve ..	1093-94	..	18 head quarters: aṣṭādaśapaṭṭaṇamum.
Ep. Car., VII, Shikārpur 94.	Shimoga ..	1094	..	..
Ind. Ant., X, p. 185 ..	Dhārwāḍ ..	1095-96	..	..

Ind. Ant., VI, pp. 137-38.	Kalādgi ..	1096-97	set apart the proceeds of an impost for the purpose of maintaining a tank.	..
Ep. Car., X, Mulbāgal 247.	Kōlār ..	1100	the 500 made the Mahēndra-catūrvēdimangala an Ayyāvoḷe.	..
Ep. Car., XI, Dāvaṇagere 149.	Chitaldroog ..	1113	..	Koḍanganūr is called the southern Ayyāvoḷe.
Ep. Ind., XIII, p. 317 ..	Dharwar ..	1126	..	500 svāmins of Nalkupatti.
97 of 1915, *A.R.E.*, 1916, part ii, para 21.	Tirumurugan-pundi, Coimbatore.	1130	gift by a merchant of Ayyapoḻil.	not the name of a village but of a merchant gild.
Ep. Car., II, 159 ..	Śravaṇa-Beḷgoḷa	1130	..	Dammi-seṭṭi of the passport department of Ayyāvoḷe.
Ep. Ind., XIX, p. 35 ..	Miraj ..	1144	..	..
Ep. Ind., XIX, p. 31 ..	Kolhapur ..	1144	donations ..	the 500.
Ep. Car., VII, Shikārpur 118.	Shimoga ..	1150	..	..
Ep. Car., VIII, Sorab, 328.	Shimoga ..	1159	free pass for 20 bullocks for the benefit of a temple.	refers to the southern Ayyāvoḷe.
Ep. Ind., V, pp. 9-23 ..	Bijapur ..	1161	..	at Mannagavalli the 200.

Reference.	Place	Date. A.D.	Purpose of meeting	Remarks
478 of 1914 ..	Holal, Bellary ..	1178	..	..
Ep. Car., X, Kōlār 170.	Kōlār ..	1180	..	..
Ind. Ant., XIV, p. 15 ..	Sāngli State ..	1182-83	..	..
Ep. Car., VII, Honnāḷi 91.	Shimoga ..	1185	..	Koḷḷigaṇaghaṭṭa is described as a refuge for all the nānādēśis from Ayyāvaḷege.
Ep. Car., XII, Tiptur 43.	Tumkūr ..	1205	..	Ālambūr is spoken of as a warehouse to the southern Ayyāvoḷe.
Ep. Car., XI, Dāvaṇagere 105.	Chitaldroog ..	1218	..	500 svāmis of Āryyāvaḷe.
Ep. Car., V, Arsikere 77.	Hassan ..	1220	..	Arsiyakeṟe, the southern Ayyāvoḷe.
Ep. Car., XII, Gubbi II.	Tumkūr .	1226	..	Niṭṭūr is called the southern Ayyāvoḷe.
Ep. Car., VII, Honnāḷi. 8.	Shimoga ..	1228	..	500 svāmis.
Ep. Car., XI, Hoḷalkere 104.	Chitaldroog ..	1228	..	..
Ep. Car., XI, Hoḷalkere 121.	Chitaldroog ..	1240	..	Nirugunda, the southern Ayyāvoḷe.

Ep. Car., VIII, Sorab 268.	Shimoga ..	1245	..	Kōṭīśvara, a southern Ayyāvoḷe.
Ep. Ind., XIX, p. 30 ..	Belgaum ..	1250	some privileges secured ..	..
Ep. Car., IX, Doḍ-Ballā-pur 31.	Bangalore ..	1267	..	..
360 of 1916 ..	Tinnevelly ..	1284	..	Eṟivīrapaṭṭaṇa.
Ep. Car., V, Arsikere 13.	Hassan ..	1288	..	..
180 of 1905 ..	Kurnool ..	1292	..	..
A.R.E., 1919, copper-plates 9 and 10.	..	1303	..	merchants of the 18 samayas of all countries (residing) in Nandyāla-sthala.
275 of 1905 ..	Kurnool ..	1387	..	a body of merchants who followed the Vīra Baḷañjiya doctrine and immigrated from Ahichchatra.
223 of 1918 ..	Haluvagalu, Bellary.	1389	setting up a Nanni-pillar in the market-place at Haluvāgilu.	the Aivoḷe [seṭṭis].
18 of 1910 ..	Coimbatore ..	1397	gift for feeding the members of their community.	
Ep. Car.. IV, Chāmarāj-nagar 45.	Mysore ..	1403	..	Ālūr, the southern Ayyāvaḷiyūr.

Reference	Place	Date. A.D.	Purpose of meeting	Remarks
402 of 1915 ..	Guntur ..	1405	..	Vallabhi-śeṭṭi is called the lord of Ayyāvaḷi-pura.
818 of 1917 ..	Anantapur ..	1451	some privileges granted to the Ayyāvoḷe.	
Ep. Car., XII, Maddagiri 35.	Tumkūr ..	1502	..	
70 of 1912, *A.R.E.*, 1912, part ii, para 56.	Anantapur ..	1538	grants tolls ..	
377 of 1911 ..	Nārāyaṇavanam, North Arcot.	1622-23	gift of tolls ..	'by common consent'.
Ep. Car., IX, Bangalore 1.	Bangalore ..	1628	..	
A.R.E., 1918, copper-plate 18.	Anantapur .	1680	..	a gift by the samayins of Ayyāvaḷi.
17 of 1910 ..	Kollēgāl, Coimbatore ..	..	..	the merchants of [Ayya]pōḻil.
138 of 1910, *A.R.E.*, 1910, part ii, para 32.	Tenkarai, Madura.	20th year of Jaṭā-varman *alias* Tribhuvana-Cakravartin Śrivallabha-dēva.	..	refers to [the five **hundred] of Ayya-**poḻil..

216 of 1918 ..	Kuṟuvaṭṭi, Bellary.	..	..	the 500 svāmis of Ayyāvaḷe, having assembled as mahānāḍu at Kuṟuvaṭṭi, made some grants.
A.R.E., 1919, copper-plate 9.	Nellore ..	..	grant of exemption from tolls to a certain Malliśeṭṭi.	the 500 svāmis of Ayyāvuḷa.

iv. Some Measures of Capacity, Weight and Land

(a) Measures of Capacity.

*Canarese**—

10 *paṇam*	1 *honnu* (*ponnu*).
4 *kākinī*	1 *vīsam.*
5 *vīsam*	1 *hāgam* or *pāgam.*
4 *pāgam*	1 *paṇam.*
10 *paṇam* (gold)	1 *gadyāṇa* (*honnu,* gold).
4 *suvarṇam*	1 *karṣam.*
4 *karṣam*	1 *palam.*
20 *palam*	1 *tole.*
20 *tole*	1 *bhārum.*
4 *jave*	1 *pāgam.*
4 *pāgam*	1 *baṇṇam.*
4 *baṇṇam*	1 *kalpāyam.*
4 *kalpāyam*	1 *kāñcanam.*
4 *gidda*	1 *sollage.*
4 *sollage*	1 *baḷḷam.*
4 *mānam*	1 baḷḷam.
4 *baḷḷam*	1 *koḷagam.*
20 *koḷagam*	1 *khaṇḍugam.*
8 *java*	1 *angulam.*
12 *angulam*	1 *gēṇ.*
4 *gēṇ*	1 *hasta.*
4 *hastam*	1 *daṇḍam.*
2000 *daṇḍam*	1 *krōśam.*
4 *krōśam*	1 *yōjanam.*

*Rājāditya, *Vyavahāraganitam,* from a manuscript copy kindly given to me for use by Mr. H. Sesha Iyengar, Oriental Research Department, Madras University.

*Tamil**—

5 *śeviḍu*	1 *āḻākku.*
2 *āḻākku*	1 *uḻakku.*
2 *uḻakku*	1 *uri.*
2 *uri*	1 *nāḻi*=1 *paḍi* 108 inches cubic capacity.
8 *nāḻi* [*paḍi*]	1 *kuṟuṇi* = 1 *marakkāl* = ½ cubic foot = 500 fluid ounces.
2 *kuṟuṇi*	1 *padakku.*
2 *padakku*	1 *tūṇi.*
3 *tūṇi*	1 *kalam.*

The Madras measure is 108 inches cubic capacity, contains 62·5 fluid ounces and is usually 4·5 inches in diameter, and 6·75 inches deep. 1 fluid ounce pure water weighs 1 oz. avoirdupois.

Malayalam—

2 *āḻākku*	1 *oḻaku.*
2 *oḻaku*	1 *uri.*
2 *uri*	1 *nāḻi.*
4 *nāḻi*	1 *eḍangaḻi.*
6 *nāḻi*	1 *nārāyam.*
10 *nārāyam*	1 *para.*

Telugu†—

4 *citti*	1 *sola* = 70 *tola* of rice heaped.
4 *sola*	1 *munta*=280 *tola* or 3½ *pucka* seers.
4 *munta*	1 *kuntsam*=1,120 *tola* or 14 *pucka* seers.

**South Ind. Inscr.*, II, pp. 48 n. 5, 75 n. 1 and 2.

†*Nellore Inscriptions*, III, Appendix III, p. 1487.

4 *kuncam*	1 *tūm*, about a hundred-weight.
20 *tūm*	1 candy or *puṭṭi*, about a ton.

(b) Measures of Weight.

*Tamil**—

10 *kāṇi*	1 grain.
4 *kāṇi*	1 *mā*.
2 grains	1 *kunṟi*.
2 *kunṟi*	1 *mañjāḍi*.
2 *mañjāḍi*	1 *paṇattūkkam*.
20 *mañjāḍi*	1 *kaḻañju*.

Telugu†

1 pagoda weight	52¼ grains troy.
1 *tola*	180 grains troy.
10 *kurruck* pagodas or 3 *tola*.	1 *pollam*.
8 *pollam* or 24 *tola*	1 *pucka* seer.
5 seer or 120 *tola*	1 *viss*.
8 *viss* or 960 *tola*	1 maund (100 pounds troy).
20 maunds	1 candy or *puṭṭi*.

(c) Measures of Land.

Tamil‡—

576 square feet	1 *kuḻi*.
100 *kuḻi*	1 *kāṇi*.
5 *kāṇi*	1 *vēli*.

*South Ind. Inscr., II, pp. 8 n., 36 n., 65 n., and 338.
†Nellore Inscriptions, III, Appendix III, p. 1487.
‡South Ind. Inscr., I, p. 92 n., II, p. 392.

[In Tanjore:

144 square feet	1 *kuḻi*.
100 *kuḻi*	1 *mā*.
20 *mā*	1 *vēli*.
note 1 *vēli*	6·6 acres.
1 *mā*	·33 acre.
1 *kuḻi*	·0033 acre.]

*Telugu**—

1 cubit	19·68 inches.
32 cubits	1 rod.
1 rod square	2,756¼ square feet=1 *gunṭa*= ·0633 acre.
50 *gunṭa*	1 *gurtu* or *gorru*=3·1637 acres.

*Nellore Inscriptions, III, Appendix III, p. 1487.

v. Rates of Interest in South India

(10—15th centuries)

(*Note*:—Column 5 represents Rate of Interest calculated; column 7 represents how it is reckoned in the inscription.)

No.	Reference	Date A.D.	Place (noted by districts)	Rate per cent. per year	Kind or money	Monthly, yearly, half-yearly, daily etc. [as reckoned]	Remarks
1	*Ep. Ind.*, XI, p. 228 ..	905	Chittoor ..	20	money ..	yearly ..	4 *mañjāḍi* for each *kaḷañju* every year.
2	*South Ind. Inscr.*, III, 96.	910	Tiruccendurai ..	..	paddy ..	half yearly ..	60 *kalam* of paddy—30 at the end of *kārtigai* and 30 at the end of Panguni—for 60 *kaḷañju* capital the rate being (one) *tūṇi* and one *padakku* of paddy on one *kaḷañju* for (each) *pū* (crop).
3	*South Ind. Inscr.*, III, 103.	936	Chingleput ..	15	gold ..	yearly ..	
4	*South Ind. Inscr.*, III, 105.	937	Chingleput ..	15	gold ..	half-yearly ..	
5	*South Ind. Inscr.*, III, 106.	939	Madura ..	40	gold ..	calculated monthly, paid yearly.	
6	*Ep. Ind.*, VII, p. 143 ..	962	S. Arcot ..	..	paddy ..	yearly ..	20 *kalam* of paddy for 20 *kaḷañju*.

7	*South Ind. Inscr.*, III, **186.**	978	Chingleput ..	..	paddy ..	calculated daily paid yearly ..	5 *nāḻi* every day for 15 *kaḻañju*.
8	*South Ind. Inscr.*, III, 190.	980	Takkolam ..	..	paddy ..	yearly ..	92 *kāḍi* of paddy for 92 *kaḻañju*.
9	17 of 1921 ..	982	Chingleput ..	..	paddy ..	yearly ..	4 *kāḍi* per *kaḻañju*.
10	18 of 1921 ..	983	Chingleput ..	..	paddy ..	yearly ..	2 *kāḍi* of paddy per *kaḻañju*.
11	*South Ind. Inscr.*, III, 128.	985	Chingleput ..	15	gold ..	yearly ..	
12	262 of 1910, *A.R.E.*, 1911, part ii, para 21.	988	Chingleput ..	..	oil ..	daily ..	1 *uḻakku* of oil per day for 15 *kaḻañju*.
13	263 of 1910, *A.R.E.*, 1911, part ii, para 21.	989	Chingleput ..	..	oil ..	daily ..	1 *uḻakku* of oil per day for 20 *kaḻañju*.
14	*Trav. Arch. Series*, III. 43 ..	992	Travancore ..	..	ghee ..	..	Capital to be invested in land if the capital (60 *kaḻañju*) was returned.
15	218 of 1921, *A.R.E.*, 1922, part ii, para 14.	992	North Arcot ..	$12\frac{1}{2}$	gold ..	yearly ..	$\frac{1}{8}$ *kaḻañju* of gold on every *kaḻañju*.
16	267 of 1910 ..	1004	Chingleput ..	..	oil and paddy ..		
17	227 of 1910, *A.R.E.*, 1911, part ii, para 21.	1008	Chingleput ..	..	paddy ..	..	Capital also paddy.
18	*South Ind. Inscr.*, II, 6.	1011	Tanjore ..	$12\frac{1}{2}$	paddy and money ..	calculated by the month, paid yearly ..	

No.	Reference	Date A.D.	Place (noted by Districts)	Rate per cent. per year	Kind or money.	Monthly, yearly, half-yearly, daily etc. [as reckoned]	Remarks
19	*South Ind. Inscr.*, II, 37	1011	Tanjore	12½	plantains	daily	interest calculated at ⅛ *kāśu* per *kāśu* per year; on 60 *kāśu* deposited, 7½ *kāśu* had to be paid which could purchase 9000 plantains.
20	*South Ind. Inscr.*, II, 27	1013	Tanjore	12½	gold	yearly	
21	*South Ind. Inscr.*, II, 28	1013	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy per *kāśu* per year.
22	(a) *South Ind. Inscr.*, II, 6, sect. 11	1014	Tanjore	12½	paddy	yearly	3 *kuṟuṇi* per *kāśu*.
	(b) ibid., sect. 15	1014	Tanjore	12½	gold	calculated by the month, paid yearly	⅛ *akkam* per month for each *kāśu*.
	(c) ibid., sect. 18	1014	Tanjore	..	ghee	daily	1 *uḻakku* ghee daily for 32 *kāśu* deposited.
23	*South Ind. Inscr.*, II, 24	1014	Tanjore	12½	cardamom seeds, campaka buds, khaskas roots.	yearly	calculated at ⅛ *kāśu* per year for each *kāśu* and prices reckoned.
24	*South Ind. Inscr.*, II, 25	1014	Tanjore	12½	gold	yearly	5 *kāśu* on 40 *kāśu*.

25	(a) *South Ind. Insc.*, II, 26	1014	Tanjore	..	paddy	yearly	3 *kuṟuṇi* per year for 1 *kāśu*.
	(b) *South Ind. Inscr.*, II, 26	1014	Tanjore	12½	gold	yearly	for purchasing camphor.
26	*South Ind. Inscr.*, II, 28	1014	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy for 1 *kāśu*.
27	ibid., 35	1014	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy for 1 *kāśu*.
28	*Ep. Car.*, IX, Channapaṭṇa, 129	1014	Bangalore	31¼	paddy	..	100 *kalam* on 320 *kalam* of paddy every year—to be paid in 2 instalments.
29	176 of 1915, *A.R.E.*, 1916, part ii, para 12.	1017	Chingleput	15	gold	yearly	9 *mañjāḍi* per year on 3 *kaḻañju*.
30	(a) *South Ind. Inscr.*, II, 9	1020	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy per *kāśu*.
	(b) ibid.	1020	Tanjore	12½	gold	yearly	⅛ *kāśu* per *kāśu*.
31	ibid., 82	1021	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy per year per *kāśu*.
32	ibid., 83	1021	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy per year per *kāśu*.
33	ibid., 10	1024	Tanjore	..	paddy	yearly	3 *kuṟuṇi* of paddy per year per *kāśu*.
34	ibid., 11	1024	Tanjore	12½	gold	yearly	⅛ *kāśu* per year for each *kāśu*.
35	ibid., 12	do.	do.	do.	do.	do.	do.

No.	Reference	Date A.D.	Place (noted by districts)	Rate per cent. per year	Kind or money	Monthly, yearly, half-yearly, daily etc. [as reckoned]	Remarks
36	ibid., 13 ..	1024	Tanjore ..	$12\frac{1}{2}$	gold ..	yearly ..	$\frac{1}{8}$ *kāśu* per year for each *kāśu*.
37	ibid., 14 ..	do.	do. ..	do.	do. ..	do. ..	do.
38	ibid., 15 ..	do.	do. ..	do.	do. ..	do. ..	do.
39	ibid., 16 ..	do.	do. ..	do.	do. ..	do. ..	do.
40	ibid., 17 ..	do.	do. ..	do.	do. ..	do. ..	do.
41	ibid., 18 ..	do.	do. ..	do.	do. ..	do. ..	do.
42	ibid., 19 ..	do.	do. ..	do.	do. ..	do. ..	do.
43	626 of 1920 ..	do.	S. Arcot ..	..	flowers ..	daily ..	registers the agreement given by certain villagers to supply flowers as interest on 60 *kāśu* received by them.
44	135 of 1906 ..	1027	S. Arcot ..	..	..	..	repairs to be made every ten years from the interest.
45	245 of 1915, *A.R.E.*, 1916, part ii, para 12.	1039	N. Arcot ..	45	gold ..	yearly ..	money borrowed by Nagarattārs; 3 *kaḻañju* and 8 *mañjāḍi* on $7\frac{1}{2}$ *kaḻañju* and 2 *mañjāḍi*.
46	140 of 1912, *A.R.E.*, 1913, part ii, para 22.	1043	Chingleput ..	..	paddy ..	yearly ..	money borrowed by Nagarattārs 2 *kalam* paddy on 1 *kaḻañju*.
47	*South Ind. Inscr.*, III, 28 ..	1046	Chingleput ..	..	..	..	

48	137 of 1912 ..	1046	Chingleput ..	..	paddy ..	yearly ..	75 *kalam* of paddy on 30 *kāśu.*
49	*South Ind. Inscr.*, III, 55 ..	1053	N. Arcot ..	$16\frac{2}{3}$	gold ..	yearly ..	do.
49a	ibid ..	do.	do. ..	..	paddy ..	calculated daily, paid yearly ..	3 *uḻakku* and 2 *śeviḍu* paddy per day for every *kaḻañju.*
50	*South Ind. Inscr.*, III, 56 ..	1054	N. Arcot ..	35	gold ..	yearly ..	7 *mañjāḍi* of gold for each *kāśu.*
51	214 of 1911 ..	1054	Tanjore ..	..	paddy ..	yearly ..	1 *kalam* of paddy on each *kāśu*—to be utilized for repairing damages to the irrigation channel.
52	*Ep. Car.*, XI, Dāvaṇagere 140 ..	1060	Chitaldroog ..	8	money ..	monthly ..	4 *gadyāṇa* yielded an interest of a *hāga* per month.
53	243 of 1921 ..	1073	N. Arcot ..	..	paddy ..	yearly ..	50 *kalam* of paddy on 25 *kaḻañju* of gold.
54	*Ep. Ind.*, XII, p. 273 ..	1077	Gulbarga ..	25	..	yearly ..	
55	*South Ind. Inscr.*, III, p. 471 ..	1098	Tanjore .	25	paddy ..	yearly ..	
56	142 of 1922 ..	1101	Chittoor ..	180?	gold ..	monthly ..	6 *kāśu* monthly interest on 40 *kāśu.*
57	228 of 1923 ..	1105	Tanjore ..	..	agreement to pay taxes in lieu of interest ..	..	money borrowed for purchasing house sites.
58	*Ep. Ind.*, XIII, p. 58 ..	1112	Nizam's Dominions ..	10	money ..	yearly ..	1 *pana* per gold piece annually; 12 *gadyāṇa* on 120 *gadyāṇa.*

No.	Reference	Date A.D.	Place (noted by districts)	Rate per cent. per year	Kind or money	Monthly, yearly, half-yearly, daily etc. [as reckoned]	Remarks
36	ibid., 13 ..	1024	Tanjore ..	$12\frac{1}{2}$	gold ..	yearly ..	$\frac{1}{8}$ *kāśu* per year for each *kāśu*.
37	ibid., 14 ..	do.	do. ..	do.	do. ..	do. ..	do.
38	ibid., 15 ..	do.	do. ..	do.	do. ..	do. ..	do.
39	ibid., 16 ..	do.	do. ..	do.	do. ..	do. ..	do.
40	ibid., 17 ..	do.	do. ..	do.	do. ..	do. ..	do.
41	ibid., 18 ..	do.	do. ..	do.	do. ..	do. ..	do.
42	ibid., 19 ..	do.	do. ..	do.	do. ..	do. ..	do.
43	626 of 1920 ..	do.	S. Arcot ..	..	flowers ..	daily ..	registers the agreement given by certain villagers to supply flowers as interest on 60 *kāśu* received by them.
44	135 of 1906 ..	1027	S. Arcot ..	..	..	..	repairs to be made every ten years from the interest.
45	245 of 1915, *A.R.E.*, 1916, part ii, para 12.	1039	N. Arcot ..	45	gold ..	yearly ..	money borrowed by Nagarattārs; 3 *kaḻañju* and 8 *mañjāḍi* on $7\frac{1}{2}$ *kaḻañju* and 2 *mañjāḍi*.
46	140 of 1912, *A.R.E.*, 1913, part ii, para 22.	1043	Chingleput ..	..	paddy ..	yearly ..	money borrowed by Nagarattārs 2 *kalam* paddy on 1 *kaḻañju*.
47	*South Ind. Inscr.*, III, 28 ..	1046	Chingleput ..	..	..	..	

48	137 of 1912 ..	1046	Chingleput ..	..	paddy ..	yearly ..	75 *kalam* of paddy on 30 *kāśu.*
49	*South Ind. Inscr.*, III, 55 ..	1053	N. Arcot ..	16⅔	gold ..	yearly ..	do.
49a	ibid ..	do.	do. ..	..	paddy ..	calculated daily, paid yearly ..	3 *uḻakku* and 2 *śeviḍu* paddy per day for every *kaḻañju.*
50	*South Ind. Inscr.*, III, 56 ..	1054	N. Arcot ..	35	gold ..	yearly ..	7 *mañjāḍi* of gold for each *kāśu.*
51	214 of 1911 ..	1054	Tanjore ..	..	paddy ..	yearly ..	1 *kalam* of paddy on each *kāśu*—to be utilized for repairing damages to the irrigation channel.
52	*Ep. Car.*, XI, Dāvaṇagere 140 ..	1060	Chitaldroog ..	8	money ..	monthly ..	4 *gadyāṇa* yielded an interest of a *hāga* per month.
53	243 of 1921 ..	1073	N. Arcot ..	..	paddy ..	yearly ..	50 *kalam* of paddy on 25 *kaḻañju* of gold.
54	*Ep. Ind.*, XII, p. 273 ..	1077	Gulbarga ..	25	..	yearly ..	
55	*South Ind. Inscr.*, III, p. 471 ..	1098	Tanjore .	25	paddy ..	yearly ..	
56	142 of 1922 ..	1101	Chittoor ..	180?	gold ..	monthly ..	6 *kāśu* monthly interest on 40 *kāśu.*
57	228 of 1923 ..	1105	Tanjore ..	..	agreement to pay taxes in lieu of interest ..	..	money borrowed for purchasing house sites.
58	*Ep. Ind.*, XIII, p. 58 ..	1112	Nizam's Dominions ..	10	money ..	yearly ..	1 *pana* per gold piece annually; 12 *gadyāṇa* on 120 *gadyāṇa.*

No.	Reference	Date A.D.	Place (noted by Districts)	Rate per cent. per year	Kind or money	Monthly, yearly, half-yearly, daily etc. [as reckoned]	Remarks
59	397 of 1913, *A.R.E.*, 1914, part ii, para 16.	1152	S. Arcot ..	..	paddy ..	..	2 *tūṇi* and 3 *kuṟuṇi* of paddy on every *kāśu*.
60	*Ep. Car.*, VI, Chikmugaḷūr 141 ..	1159	Kaḍūr ..	..	gold ..		1½ *pāga* per *pon*; period not stated.
61	196 of 1925 ..	1167	Tanjore ..	..		..	to pay taxes in lieu of interest.
62	*Ep. Car.*, IX, Channapaṭṇa 88b ..	1169	Bangalore ..	75	gold ..	..	interest at 1 *pāgam* per month on the amount deposited, viz., 4 *paṇam*.
63	421 of 1912 ..	1170	Tanjore ..	37½	gold ..	yearly ..	11¼ *kāśu* on 30 *kāśu*.
64	*Ep. Car.*, XI, Dāvaṇagere 33 ..	1172	Chitaldroog ..	30	gold ..	monthly ..	1 *hāga* per *hon* per month.
65	*Ep. Car.*, X, Mulbāgal 45 ..	1185	Kōlār ..	30	gold ..	monthly ..	1 *pāgam* per month on each *pon*.
66	*Ep. Car.*, V, Arsikere 174 ..	1194	Hassan ..	37½	gold ..		
67	264 of 1913, *A.R.E.*, 1914, part ii, para 17.	1195	S. Arcot ..	..	..	..	capital of 1100 *kāśu* invested; the capital to be produced at the end of every fifth year.

68	*Ep. Car.*, V, Hassan 73	1199	Hassan ..	..	gold ..	..	9 *honnu* on 12 *gadyāṇa*, period not specified.
69	257 of 1912, *A.R.E.*, 1913, part ii, para 12 ..	XII c.	Chingleput ..	15	gold ..	yearly ..	3 *mañjāḍi* per annum on 1 *kaḻañju* of gold.
70	*Ep. Car.*, II, Śravaṇa Beḷgoḷa 333 ..	1206	Mysore ..	12½	gold ..	yearly ..	1 *haṇa* on 8 *haṇa*.
71	*Ind. Ant.*, XXVI, p. 144.	1216	Travancore ..	..			the word used for interest is "*poliyūṭṭu*", (feeding by multiplication).
72	*Ep. Car.*, VI, Kaḍūr 55 (a) ..	1217	Kaḍūr ..	30	gold ..	monthly ..	1 *hāga* per month on 1 *gadyāṇa*.
73	*Ep. Car.*, V, Arsikere, 128 ..	1229	Hassan ..	90	gold ..	monthly ..	3 *hāga* a month for 1 *hon*.
74	117 of 1915, *A.R.E.*, 1916, part ii, para 20 ..	1234	Coimbatore ..	30	gold ..	monthly ..	1 *kunṟi* per month per *accu*.
75	*Ep. Car.*, VI, Kaḍūr 55 (b) ..	1237	Kaḍūr ..	15	gold ..	monthly ..	1 *hāga* a month on 1 *gadyāṇa*.
76	*Ep. Car.*, VI, Kaḍūr 92 ..	1259	Kaḍūr ..		gold ..	yearly ..	1 *pāgam* on each *pon*.
77	*Ep. Car.*, X, Bowringpet 32 ..	1262	Kōlār ..	30	gold ..	monthly ..	
78	*Ep. Car.*, XI, Dāvaṇagere 48 ..	1263	Chitaldroog ..	30	gold ..	yearly ..	
79	*Ep. Car.*, II, 247 ..	1274	Mysore ..	30	milk ..	calculated by the month, paid daily ..	calculated in money.
80	*Ep. Car.*, X, Bowringpet 7(b) ..	1275	Kōlār ..	30	gold ..	monthly ..	1 *pāgam* per month on 1 *pon*.

No.	Reference.	Date A.D.	Place (noted by districts)	Rate per cent. per year	Kind or money	Monthly, yearly, half-yearly, daily etc. [as reckoned]	Remarks
81	*Ep. Car.*, V, Bēlūr 90 ..	1281	Hassan ..	25	gold ..	yearly ..	2 *paṇa* interest on 4 *gadyāṇa* for one year.
82	ibid. ..	1281	do. ..	20	gold ..	yearly ..	
83	*Ep. Car.*, X, Bowringpet 29 ..	1285	Kōlār ..	30	gold ..	monthly ..	1 *pāgam* per month on each *pon*.
84	ibid., 30 ..	1285	do. ..	30	gold ..	monthly ..	
85	*Ep. Car.*, V, Bēlūr 161.	1285	Hassan ..	30	gold ..	monthly ..	1 *hāga* a month on 3 *gadyāṇa*—total 9 *paṇa* a year.
86	ibid., 91 ..	1287	do. ..	20	gold .	yearly ..	
87	*Ep. Car.*, VI, Tarīkere 89 ..	1297	Kaḍūr ..	?			2 *haṇa* on 40 *gadyāṇa* a year.
88	*Ep. Car.*, IV, Heggaḍadēvankōṭe 61 ..	1407	Mysore ..	15	gold ..	monthly ..	1 *bēḷe* (½ a *hāga*) per month on ½ *gadyāṇa*.
89	ibid., 63 ..	1407	do. ..	15	gold ..	monthly ..	do.
90	*Trav. Arch. Series*, V, p. 126 ..	1464	Travancore ..	24	gold ..	yearly ..	
91	*Ep. Car.*, IV, Chāmrājnagar 160 ..	1492	Mysore ..	24	gold ..	monthly ..	2 *haṇa* for every 10 *honnu*.
92	*Trav. Arch. Series*, VI, p. 46 ..	1510	Travancore ..	9	gold ..	yearly ..	4½ *paṇam* per year on 50 *paṇam*.

vi. The *Māḍai*

The relation of the *māḍai* to other gold coins in the country has been estimated differently by scholars. Hultzsch estimates it at half a pagoda, [*Ep. Ind.*, V, p. 32]. Rice, in the translation of an inscription [*Ep. Car.*, III, Tirumakūḍal Narsīpūr 15], has translated *māḍai* as half pagoda. The Nellore Index also has adopted it.

The following table will show at a glance the relation of the *māḍai* to the various coins in the country:—

Name	Reference	Date A.D.	Place	Ratio to gold or other coins	Metal	Purchasing power	Remarks
1. *māḍai* ..	*Ep. Car.*, IV, Chāmarājnagar 69 ..	1023	Mysore ..				*māḍai* used to buy some lands.
2. *Madhurāntakadēvan-māḍai*	140 of 1912, *A.R.E.*, 1913, part ii, para 22.	1040	Chingleput ..	1 *kaḷañju* of gold.			see *A.R.E.*, 1913, part ii, para 22: interest charged on 1 *kaḷañju*=2 *kalam*; interest on 1 *Madhurāntakadēvan-māḍai*=2 *kalam*; likely that the *māḍai* also weighed one *kaḷañju* of gold.
3. *Madhurāntakadēvan-māḍai*	156 of 1912, *A.R.E.*, 1913, part ii, para 22.	1044	Chingleput ..			250 *kuḻi* of land ..	
4. *māḍai* ..	*South Ind. Inscr.*, III, 66 ..	1072	Mysore ..	2 *kāśu* ..		5½ *kalam* of paddy ..	gift of 20 *māḍai* for evening lamps.
5. *māḍai* ..	516 of 1908 ..	1093	Trichinopoly .				
6. *Bhujabala-māḍai* ..	601 of 1907 ..	1094	Cuddapah ..				
7. *māḍai* ..	144 of 1925 ..	1101	Tanjore ..				*Kuḍiñaikkal* (standard gold) equivalent to a *māḍai*.

8. *Mudikonda-Cōla-māḍai*	*Ep. Car.*, III, Tirumakūḍal-Narsīpur 15	1120	Mysore				Rice translates it as half-pagoda.
9. *Birudu-māḍa* (a)	175 of 1897	1149	Kṛṣṇa				
10. *Birudu-māḍa* (b)	189 of 1897	1153	Kṛṣṇa				
11. *nokki-māḍai*	*Ep. Car.*, X, Mulbāgal 49 (b)	1185	Mysore	*kaḻañju*	gold		*ippon—enkaḻañjum*, see *n.* ibid.
12. *Surabhi-māḍa*	634 of 1926	1215	Ganjam				
13. *Nandi-māḍa*	380 of 1905	1216	Vizag				
14. *māḍai*	386 of 1919	1255	Chingleput	9¾ *paṇam*			39 *paṇam* as equivalent to 4 *māḍai*.
15. *gaṇḍamāḍa*	*Ep. Ind.*, V, p. 32	1309	Ganjam	*niṣka*			Hultzsch translates as half pagoda.
16. *māḍai*	*Ep. Ind.*, VII, p. 132	1316	Chingleput	5 *paṇam*			2 *paṇam* for rice; 1½ *paṇam* for *perfumes*; ½ *paṇam* for lamps; 1 *paṇam* for ingredients of pepper-milk. Total 1 *māḍai* per day.
17. *Śingāya-māḍa*	257 of 1905	1386	Kurnool				
18. *Māḍai* or *māḍa*	*Nellore Inscriptions*, III, Glossary, s. v. *māḍa*						half a pagoda, i.e., Rs. 2 or Rs. 1-12-0.

Number 11 in the list is a very clear inscription,—it says that the *māḍai* was equal to one *kaḻañju*, and it is supported by No. 2, by which, the calculation shows 1 *kaḻañju* was equal to a *māḍai*. Two other inscriptions Number 14 and 15 in the list also confirm this conclusion; for according to the former, 4 *māḍa* was equal to 39 *paṇam*, and hence 1 *māḍa*=(almost equal to) 10 *paṇam*; we have seen that 1 *kaḻañju* was 10 *paṇam*; the latter equates *māḍa* to a *niṣka* which was also equal to a *kaḻañju*. Thus this appears to fix the *māḍa* at more or less 52 gr. gold—the weight of a *kaḻañju*.

This would further seem to be confirmed by the coins Nos. 24 and 25, and 29, published in the *Ind. Ant.*, XXV, pp. 321-22, which, according to Hultzsch, (*Ep. Ind.*, VII, p. 130, n. 1) are perhaps identical with the *Rājarāja-māḍa* and *Jaya-māḍa*. They weigh 66½, 66½, 57½ to 59 grains respectively.

See *Ep. Ind.*, VII, p. 130 n. 1 for a number of instances of *māḍa* of different kinds, enumerated and discussed. It is difficult to follow Dr. Hultzsch's suggestion [*Ind. Ant*., XXV, p. 322 n. 23], that Elliot's coin No. 93, a gold *fanam* of 6½ gr. seems to belong to the *Jaya-māḍa* series. It will be noticed that it stands closer to the *Rājarāja-māḍa* series by being almost a tenth of the *Rājarāja-māḍa*.

The one contradictory evidence—and a very clear one—No. 16 in the list shows that, *māḍai* was also used in the sense of half a pagoda. For, the inscription, after detailing various items of expenses, totals the *paṇam* for the day at 5 *paṇam*, and says 'Total for one day 1 *māḍa*, and for 360 days 360 *māḍa*'. 5 *paṇam* were equivalent to half a pagoda. Hence Hultzsch's deduction—that a *māḍa* was ½ a pagoda would seem to be correct, in the particular context, though elsewhere [e.g. *Ep. Ind.*, V, p. 32] when it is equated to *niṣka* he would seem to be not on sure ground.

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vii. The *Kāśu*

I have stated in the text, (p. 711) that the *kāśu* has to be estimated at 6—156 gr. if gold, and if copper. the smallest copper coin. In this note, I propose to review the contemporary evidence on the subject which leads to this conclusion.

Kāśu in its general sense means coin or money in general. Thus *pon-cāsh* means gold coin. *velly-cāsh,* silver coin and *śembu-cāsh* copper coin. We have referred to this here to observe that *cāsh* was used in a similar sense in the middle ages also.*

*"From the Tamil form *kāśu*, or perhaps from some *Konkaṇi* form which we have not traced, the Portuguese seem to have made caixa, whence the English *cash*. In Singalese, also *kāsi* is used for 'coin' in general"—Yule and Burnell, *Hobson-Jobson*, s. v. *cash*.

But we have no need to dwell at length on this usage. What is of greater concern to us is the determination of (i) the metal, whether it was of gold, silver, or copper, (ii) the intrinsic value of the coin *kāśu*, in other words, its metallic content.

Regarding the first point we may, at the outset, say that the *kāśu* was understood to refer both to the gold *kāśu* and to the copper *kāśu*. The following table illustrates the position taken up here:—

Kāśu

Name	Reference	Date A.D.	Place	Relation to other coins	Metal	Purchasing power	Remarks
1.	*Ep. Ind.*, VII, p. p. 130, 20A ..	IX c	S. Arcot ..	...	gold	...	*kaḷañju* of gold equal in fineness to the old *kāśu*.
2.	105 of 1925 ..	985 ? (Rājarāja 16th year)	Tanjore ..	=*kaḷañju*=$3\frac{1}{4}$ *mañjāḍi*? ..			see also *A.R.E.*, 1925, part ii, para 10.
3.	298 of 1927 ..	989	Tanjore ? ..			1 *vēli* and odd of land for 25747 *kāśu* ..	
4.	*South Ind. Inscr.*. II, 6 ..	1011	Tanjore ..	=12 *akkam*.		2 *kalam* of paddy =1 *kāśu* ..	1 *kāśu* could purchase 3 sheep.
5.	*South Ind. Inscr.*, II, 64 ..	1011	Tanjore ..			3 ewes=1 *kāśu*..	
6.	149 of 1921 ..	1014	N. Arcot ..	=*pon* ..		9 sheep=1 *kāśu* or *pon* ..	gift of 20 *pon* for purchasing 180 sheep at 9 sheep per *kāśu*; hence *kāśu*=*pon*.
7	506 of 1905 ..	1014	N. Arcot ..			1+1|20+1|40 *vēli* of land= 2,125 *kāśu* ..	

8.	*Ind. Ant.*, XL, p. 266 ..	1015					Hayavadana Rao estimates it at Rs. 2; A *kāśu* could purchase 2 *kalam* of paddy valuing 1 *kalam* of paddy at Re. 1, a *kāśu* is equated with Rs. 2.
9.	176 of 1915 ..	1017	Chingleput ..	=3 *kaḻañju* ..	gold ..	120 *kāḍi*=1 *kāśu*.	*A.R.E.*. 1916, part ii, para 12.
10.	522 of 1922, *A.R.E.*, 1923, part ii, para 45 ..	1034	Tanjore ..	=2|823 *kaḻañju*.	copper? ..	1¾ *vēli* and 1 *mā* 5,350 *kāśu*.	1 *kaḻañju* of gold about 41¼ *kāśu*.
11. *Rājarājan-kāśu* ..	141 of 1912 ..	1043	Tiruvoṟṟiyūr, Chingleput ..	½ of *Madhurān-takadēvan-māḍai* ..			See *A.R.E.*, 1913, part ii, para 22.
12.	*Ep. Car.*, X, *Kōlār* 108 ..	1071	Kōlār ..	=6 *mañjāḍi* of gold=½ *kaḻañju*.	gold ..	4 sheep=1 *kāśu*, 24 cubits cloth =1 *kāśu*, ½ *kaḻañju* gold =1 *kāśu*, 1 she buffalo = 2 *kāśu*.	
13.	*Ep. Car.*, X, *Kōlār* 106d ..	1071	Kōlār ..			2 *kalam*, 2 *tūṇi* and 1 *kuṟuṇi*= 1 *kāśu* ..	
14.	131 and 132 of 1912, *A.R.E.*, 1913, part ii, para 33 ..	1072	Chingleput ..			4 *kalam* of paddy =1 *kāśu*, 100 *kuḻi* of land= 1 *kāśu*. ..	

Name	Reference	Date A.D.	Place	Relation to other coins	Metal	Purchasing power	Remarks
15.	*South Ind. Inscr.*, III, 66 ..	1072	Mysore ..	½ *māḍai* ..		2¾ *kalam* of paddy=1 *kāśu*.	
16.	46 of 1914, *A.R.E.*, 1915, part ii, para 23 ..	1099	Tanjore ..	=½ *kaḻañju* ..		½ *kaḻañju* of gold = 1 *kāśu*, 35 *palam* bronze=1 *kāśu*, 30 *palam* copper=1 *kaśu*, 26 2|3 *palam* silver=1 *kāśu*, 70 *palam* *tarā* =1 *kāśu*.	*tarā* is a metallic alloy.
17.	284 of 1923 ..	1118	Ramnad ..	7 *diramam* ..			1 *diramam*=9¾d., hence 1 *kāśu* 68¼ d. i.e., 5s 8¼ d.
18.	371 of 1909 ..	1118	S. Arcot ..			32 cows=10 *kāśu* ..	
19.	502 of 1912 ..	1133	Trichinopoly ..	¾ *kaḻañju* of gold.		1 *vēli*=22½ *kāśu*.	
19a.	86 of 1920 ..	1180?	Trichinopoly ..			1 sheep=48 *kāśu* ..	
19b.	261 of 1913 ..	1184	Cidambaram ..			9 *mā* of land= 5000 *kāśu* ..	
20.	202 of 1912 ..	1213	Chingleput ..			1 *vēli*=2½ *kāśu*..	See *A.R.E.*, 1913, part ii, para 39.

21.	176 of 1911 ..	1253	Trichinopoly ..				gift of 20,000 *kāśu* for offerings to an image.
22. ***anṟāḍu-naṟ-pudukkāśu*** ..	*Inscriptions of the Pudukkōṭṭai State*, 666 ..	1255	Pudukkōṭṭai ..			12 *mā* of land for 14,000 *kāśu* ..	
23.	ibid., 377 ..	1269	Pudukkōṭṭai ..			500 *kuḻi* of land for 500 *kāśu* ..	
23a. ***śōḻiya-kāśu*** .	439 of 1913 ..	1282	Salem ..	1/100 *paṇam* ..			
24. **Cas** ..	Varthema, *Travels*, p. 130 ..	1510	Calicut ..	1/16 of a silver *tare* ..			
24a.	ibid., p. 172 .	1510	Calicut ..	a *quattrino* ..		1 monkey=4 *cas* ..	
25.	704 of 1919 ..	1557	Bellary ..				
26.	260 of 1911 ..	35th year of Tribhuvana Cakravartin, Tribhuvanavīradēva.	Tanjore ..				presented 17,000 *kāśu* for offerings and lamp.
27.	157 of 1916 ..	Rājēndradēva ..	N. Arcot ..	209/740 *kalañju*.	gold ..		10 *kalañju* and 9 *mañjāḍi* of gold equal to 37 *kāśu*—*A.R.E.*, 1916, part ii, para 15.
28.	228 of 1923 ..	XII c. ?	Tanjore .	½ *kalañju* ..			

Name	Reference	Date A.D.	Place	Relation to other coins	Metal	Purchasing power	Remarks
29.	241 of 1923 ..	?	Tanjore ..	½ *kalañju* ..			
30.	246 of 1923 ..	?	Tanjore ..	½ *kalañju* ..			
31.	*Inscriptions of the Pudukkōṭṭai State*, 202 ..	Rājādhi-rāja ..	Pudukkōṭṭai ..			5 *mā* and 3 *kāṇi* of land for 200 *kāśu* ..	
32.	ibid., 281 ..	Māṟa-varman Sundara-Pāṇḍya	do. ..				to collect 200 *kāśu* from bride's house and 180 *kāśu* from bride-groom's house during marriages.
33.	ibid., 375 ..	Vīra-Pāṇḍya.	do. ..			3 *vēli* of land for 64,000 *kāśu* ..	

That *kāśu* applied to gold coins will be clear from No. 1 where *kaḻañju* of gold is spoken of as being equal in fineness to the old *kāśu*. Nos. 6, 9, 12, 19 are equally clear in their application of the term to the gold coin.

But when we turn to No. 10 (522 of 1922) or 23 (a) (439 of 1913) we are struck by the surprisingly low value of the *kāśu*, being 2|823 of a *kaḻañju*, and 1|100 *paṇam* respectively. If they were gold coins their weight must be taken at 00243 gr. or ·052 gr. respectively—a fact which in itself gives rise to suspicion. When we turn to the column of purchasing power, we are similarly struck by the difference in the number of coins paid for the same amount of thing. In the year 989 in Tanjore 1 *vēli* of land was estimated at 25,747 *kāśu* (No. 3). Again in 1034 A.D. 1¾ *vēli* and 1 *mā* were estimated at 5,350 *kāśu* (No. 10). One century later, however, in the neighbouring district of Trichinopoly 1 *vēli* cost only 22½ *kāśu* (No. 19—here definitely stated to the gold). Again, in 1213 A.D. we find 1 *vēli* cost only 2½ *kāśu* in Chingleput (No. 20) while, fifty-six years later, 3 *vēli* cost 64,000 *kāśu* at Pudukkōṭṭai (No. 33), an increase, if both *kāśu* were taken to be of the same metal of 8000 times between districts comparatively near.

These, by themselves, would not probably be direct evidence though convincing; fortunately, we have the statement of Varthema that the *kāśu* was only 1|16 of a silver tare, or equal to a Venetian *quattrine*. It is clear that here, at any rate, *kāśu* cannot be a gold coin, and we have only to conclude that it is a coin of far less value than a *tare;* from the context, it appears to be a copper coin. The value, then of *kāśu,* as copper, must be taken approximately to be a pie.

It will, in this connexion, be interesting to draw an analogy with North India. According to Elliot, (*Coins,* p. 59), the *kāśu* represents the *cowrie* of Bengal, eighty of which make a *pon* and is in fact a copper *cowrie;* eighty *kās* in like manner constituting a

fanam or *paṇa*. The *kāśu* has been identified by Ellis with the Sanskrit *karṣa* and they are probably both derived from the same original source for, according to the law books, a *karṣa* or eighty *ratis* of copper is called a *paṇa* or *karṣa paṇa*. Elliot also quotes the common expression in Madras for the smallest value, "Not worth a *cāsh*".

According to Colebrooke,* afterwards, it came to be restricted to a weight of gold or silver equal to 180 gr. troy.

The value of the gold *kāśu* varied with time and place. e.g. The *kāśu* is equated with—

3 *kaḻañju*	No. 9.
1 *kaḻañju*	No. 2.
¾ *kaḻañju*	No. 19.
½ *kaḻañju*	Nos. 12, 16, 28, 29, 30.
209|740 *kaḻañju*	No. 27.

Taking the *kaḻañju* at 52 gr. of gold it would mean 156 gr., 52 gr., 39 gr., 26 gr., 14 gr. And we are told in other inscriptions it was only 3¾ *mañjāḍi* (No. 2) and according to No. 12 it was 6 *mañjāḍi*.

Again, according to a different calculation—

No. 6	*kāśu*	was equal	to a	*pon* [52 grs.?]
11 & 15	,,	,,		½ *māḍai* [26 grs. or 13 grs.?]
17	,,	,,		7 *diramam*
4	,,	,,		12 *akkam*.

The above analysis only confirms us in our impression that it is difficult to give any definite value to the *kāśu*. The inference suggested is that though there might have been a particular coin called *kāśu*, the term was more commonly applied as a general term for all sorts of coins.

**Miscellaneous Essays*, I, p. 530.

viii. Prices

[In the following table only such inscriptions have been noticed as express the prices in terms of *kaḻañju*, *gadyāṇa*, *paṇa* or *kalam* of paddy. Other units such as *kāśu* were of varying values [see Ch. VI, Sect. (4)] and hence their value difficult to be fixed. *gadyāṇa* Rs. 6⅝. *kaḻañju* Rs. 6. *nāḻi* 3·9 lbs. *kalam* 375 lbs. *salage* 329 lbs. *koḷaga* 16·5 lbs. 1 viss=3 lbs. *palam*=3|40 lb.]

No.	Date	Place	Commodity	Quantity per *kaḻañju* per *gadyāṇa* or per *kalam* of paddy according to the unit of reckoning current	Quantity per rupee expressed in lbs.	Modern Price, per rupee, in Madras City	Remarks, references
1	905	Chittoor ..	ghee ..	45 *nāḻi* per *kaḻañju* ..	29·25 lbs.	1 lb.*	*Ep. Ind.*, XI, p. 229.
2	XI c	Travancore ..	paddy ..	2 *kalam* per *kaḻañju* ..	125 lbs.	35·37 lbs.	*Trav. Arch. Series*, V, p. 181.
3	1011	Tanjore ..	paddy ..	10 *kalam* per *kāḻañju* ..	625 lbs.	35·37 lbs.	*South Ind. Inscr.*, II, 4.
4	1011	Tanjore ..	curds ..	32 *nāḻi* per *kalam* of paddy..	249·6 lbs.	12 lbs.	*South Ind. Inscr.*, II, 26.
5	1011	Tanjore ..	sugar .	32 *palam* per *kalam* of paddy.	4·8 lbs.	8 lbs.	ibid.

*In estimating the modern prices the prices quoted by the Triplicane Urban Co-operative Stores, Madras, on 23rd April 1931 have been used.

No.	Date	Place	Commodity	Quantity per *kaḻañju* per *gadyāṇa* or per *kalam* of paddy according to the unit of reckoning current	Quantity per rupee expressed in lbs.	Modern Price, per rupee, in Madras City	Remarks, references
6	1011	Tanjore ..	plantains ..	346 plantains for 1 *kalam* of paddy ..	692 plantains.	100	ibid.
7	1011	Tanjore ..	plantains ..	192 plantains for 1 *kalam* of paddy ..	384 „		*South Ind. Inscr.*, II, 6.
8	1011	Tanjore ..	ghee ..	3 *nāḻi* per *kalam* of paddy ..	23·4 lbs.	1 lb.	ibid.
9	1011	Tanjore ..	salt ..	96 *nāḻi* per *kalam* of paddy..	750 lbs	39 lbs.	*South Ind. Inscr.*, II, 26.
10	1011	Tanjore ..	dhall .	25 *nāḻi* per *kalam* ..	195 lbs.	15·6 lbs.	ibid.
11	1011	Tanjore ..	dhall .	32 *nāḻi* per *kalam* of paddy..	249·6 lbs		
12	1011	Tanjore ..	pepper ..	3 *nāḻi* per *kalam* of paddy ..	23·4 lbs.	3·91—4·2 lbs.	*South Ind. Inscr.*, II, 26.
13	1011	Tanjore ..	mustard .	6 *nāḻi* per *kalam* of paddy ..	21 lbs	7 lbs.	ibid.
14	1011	Tanjore ..	cummin ..	2¼ *nāḻi* per *kaḻañju* of paddy.	17·5 lbs.	2·4 lbs.	ibid.
15	1011	Tanjore ..	tamarind ..	768 *palam* per *kalam* of paddy ..	115·2 lbs.	13 lbs.	ibid.
16	Rājakēsarivarman 6th year	Tanjore ..	paddy ..	15 *kalam* per *kaḻañju* ..	937·5 lbs.		232 of 1923.

17	1017	Chingleput ..	paddy ..	40 *kāḍi* per *kaḷañju* ..	833·3 lbs.		1/6 of 1915, *A.R.E.*, 1916, part ii, para 12.
18	1017	Chingleput ..	paddy ..	40 *kāḍi* per *kaḷañju* ..	833·3 lbs.		*South Ind. Inscr.*, III, 55.
19	1037	Chingleput ..	paddy ..	$13\frac{1}{3}$ *kalam* per *kaḷañju* ..			245 of 1915, *A.R.E.*, 1916, part ii, para 12.
20	1053	N. Arcot ..	paddy ..	18 *kalam* per *kaḷañju* ..	1125 lbs.		*South Ind. Inscr.*, III, 55.
21	1067	Chingleput ..	paddy ..	16 *kalam* per *kaḷañju* ..	1000 lbs.		182 of 1915, *A.R.E.*, 1916, part ii, para 16.
22	1071	Kōlār ..	oil .	6 *nāḷi* per *kalam* of paddy ..	46·8 lbs.	4 lbs.	*Ep. Car.*, X, *Kōlār* 108.
23	1099	Tanjore ..	bronze .	70 *palam* per *kaḷañju* ..	·435 lb.		46 of 1914, *A.R.E.*, 1915, part ii, para 23.
24	”	” ..	copper ..	60 *palam* per *kaḷañju* ..	·375 lb.		ibid.
25	”	” ..	silver ..	$53\frac{1}{3}$ *palam* per *kaḷañju* ..	·2475 lb.		ibid.
26	1230	Hassan ..	paddy ..	$6\frac{1}{4}$ *salage* per *gadyāṇa* ..	310·3 lbs.		Chandrasekhara Sastri, *Economic Conditions*, *H.M.U.J.*, II, p. 231.
27	1230	Hassan ..	sesamum ..	$3\frac{1}{8}$ *salage* per *gadyāṇa* ..	155·2 lbs.	15·6 lbs.	ibid.
28	1236	Maṇḍya ..	ghee .	$11\frac{1}{4}$ *koḷage* per *gadyāṇa* ..	·28 lbs.		ibid.
29	1237	Maṇḍya ..	black pepper .	$9\frac{1}{2}$ *koḷage* per *gadyāṇa* ..	23·7 lbs.		ibid.
30	1237	Maṇḍya ..	salt ..	$2\frac{3}{4}$ *salage* per *gadyāṇa* ..	136·6 lbs.		ibid.

No.	Date	Place	Commodity	Quantity per *kaḷañju* per *gadyāṇa* or per *kalam* of paddy according to the unit of reckoning current	Quantity per rupee expressed in lbs.	Modern Price, per rupee, in Madras City.	Remarks, references
31	1261	Bēlur ..	paddy ..	7 *salage* per *gadyāṇa* ..	347·6 lbs.		ibid.
32	1261	Bēlur ..	sesamum ..	3⅛ *salage* per *gadyāṇa* ..	157 lbs.		ibid.
33	1276	Sōmanāthpur ..	paddy ..	5 *salage* per *gadyāṇa* ..	248 lbs.		ibid.
34	1276	do. ..	sesamum ..	2½ *salage* per *gadyāṇa* ..	124 lbs.		ibid.
35	1276	do. ..	ghee ..	5 *koḷage* per *gadyāṇa* ..	12·5 lbs.		ibid.
36	1276	do. ..	black pepper ..	5 *koḷage* per *gadyāṇa* ..	12·5 lbs.		ibid.
37	1276	do. ..	salt ..	1½ *salage* per *gadyāṇa* ..	72·6 lbs.		ibid.
38	1278	Chennapaṭṇa ..	paddy ..	5 *salage* per *gadyāṇa* ..	248 lbs.		ibid.
39	1278	do. ..	ghee ..	5 *koḷage* per *gadyāṇa* ..	12·5 lbs.		ibid.
40	1291	Kaḍūr ..	paddy ..	6¾ *salage* per *gadyāṇa* ..	335 lbs.		ibid.
41	1291	Kaḍūr ..	sesamum ..	3¼ *salage* per *gadyāṇa* ..	161·4 lbs.		ibid.
42	1336	Vijayanagar ..	paddy ..	33¾ seers for the rupee ..	69·25 lbs.		Wilks, *Historical Sketches*, I, p. 126.
43	1391-92	N. Arcot ..	paddy ..	100 *nāḻi* per *kaḷañju* .	65 lbs. (famine price)		239 of 1906, *A.R.E.*, 1907, part ii, para 53.

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Hultzsch, *South Indian Copper Coins, Ind. Ant.*, XXI ..	*South Indian Copper Coins* by E. Hultzsch, *Ind. Ant.*, XXI, pp. 321-27.
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Rapson, *Indian Coins* ..	*Indian Coins* by E. J. Rapson, with Five Plates. [Strassburg, 1897.]
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Sewell, *Copper Coins, Ind. Ant.*, XXXII ..	*Some Doubtful Copper Coins of Southern India* by Robert Sewell, M.R.A.S., I.C.S. (Retd.). *Ind. Ant.*, XXXII, pp. 313-25.
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iii. & iv. Chronicles, Histories and Travellers' Accounts

Short Title	Full Title
'Abdu-r Razzāk, Elliot, *History*, III ..	Matla'u-s Sa'dain of 'Abdu-r Razzāk, Elliot, *History*, III, pp. 89-126.
'Abdu-r Razzāk, Major, *India* ..	Narrative of the journey of 'Abdu-r Razzāk, Ambassador from Shah Rokh. A.H. 845. A.D. 1442. Major, *India*, pp. 1-49.
Aboulfeda, *Géographie* ..	*Géographie D'Aboulféda* Traduite de L Arabe En Francais et Accompagnée de Notes et D'Éclaircissements par M. Reinaud. [2 Vols., Paris, M DCCC XLVIII—LXXXIII.]
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Bilhaṇa, *Vikramānkadēva-Carita*	*Vikramānkadevacharita. A Life of King Vikramāditya—Tribhuvanamalla of Kalyāṇa, composed by His Vidyāpati Bilhaṇa.* Edited with an Introduction by G. Bühler. [Bombay, Sansk. Ser., 14, Bombay, 1875.]
Chau Ju-Kua, *Chu-fan-chï* ..	*Chau Ju-Kua : His Work on the Chinese and Arab Trade in the Twelfth and Thirteenth Centuries, Entitled Chu-fan-chï* Translated from the Chinese and Annotated by Friedrich Hirth and W. W. Rockhill. [St. Petersburg, 1911.]
Conti, Major, *India* ..	The Travels of Nicolo Conti, in the East, in the Early Part of the Fifteenth Century, Major, *India*, pp. 1-39.
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Ibn Batuta (Defremery) ..	*Voyages D' Ibn Batoutah,* Texte Arabe, Accompagné D'une Traduction par C. Defrēmery et Le Dr. B. R. Sanguinetti. [4 vols., Paris, MDCCCLIII—MDCCCLVIII.]

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Ibn Batuta (Lee) ..	*The Travels of Ibn Batuta.* Translated from the Abridged Arabic Manuscript Copies, Preserved in the Public Library of Cambridge with Notes, Illustrative of the History, Geography, Botany, Antiquities, etc., occurring throughout the Work by the Rev. Samuel Lee, B.D., [London, 1829.]
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Ibn Haukal, Elliot, *History*, I ..	Ashkālu-l Bilād or the Kitābu l Masālik Wa-l Mamālik of Ibn Haukal, Elliot, *History*, I, pp. 31-40.
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John of Montecorvino, Yule, *Cathay*, III ..	Letters and Reports of Missionary Friars. Letters of John of Monte Corvino, Yule, *Cathay*, III, pp. 44-70.
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Mahuan, Rockhill, *Notes*, *T'oung Pao*, XVI ..	See Rockhill, *Notes*, *T'oung Pao*, XVI.
Marco Polo, *Travels* ..	*The Book of Ser Marco Polo, the Venetian, Concerning the Kingdoms and Marvels of the East.* Translated and Edited, with Notes, by Colonel Sir Henry Yule, R.E., C.B., K.C.S.I., Corr. Inst. France. Third Edition Revised throughout in the Light of Recent Discoveries by Henri Cordier (of Paris). [In two volumes, London, 1903.]
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Oṭṭakkūttan, *Kulōttunga-Cōḷan-piḷḷai-tamiḻ* ..	*Oṭṭakkūttar Iyaṟṟiya Kulōttunga Cōḷan-piḷḷait-tamiḻ*. Edited by L. Ulakanatha Pillai. [Madras, 1933.]

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Oṭṭakkūttan, Kulōttunga-Cōḻan-ulā ..	*Kavicakravarti Oṭṭakkūttar Pāṭiyaruḷiya Mūvarulā*, 1. *Vikkirama-Cōḻan-ulā*, 2. *Kulōttunga-Cōḻan-ulā*. 3. *Rājarāja-Cōḻan-ulā*, Edited by Pandit A. Gopala Iyer. [Madras, *Kurōdhana Panguni* (1925).]
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Oṭṭakūttan, *Vikrama-Cōḻan-ulā* ..	*See* Oṭṭakkūttan, *Kulōttunga-Cōḻan-ulā*.
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Pascal, Yule, *Cathay*, III ..	Letter from Pascal of Vittoria, A Missionary Franciscan in Tartary to His Brethren of the Convent of Vittoria, 1338, Yule, *Cathay*, III, pp. 81-88.
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Schiltberger, *Bondage and Travels* ..	*The Bondage and Travels of Johann Schiltberger, A Native of Bavaria, in Europe, Asia and Africa* 1396-1427. Translated by Commander J. Buchan Telfer, R.N., F.S.A., F.R.G.S., with Notes by Professor P. Brunn with A Map. [London, Printed for the Hakluyt Society, MDCCCLXXIX.]
Sīdī Alī, *The Mohit* ..	Extracts from the Mohit, that is the Ocean, a Turkish Work on Navigation in the Indian Seas. Translated by the Baron Joseph Von Hammer, Prof. Orient. Lang. Vienna, Hon. Mem. As. Soc. etc., *J.A.S.B.*, III, pp. 545-53, V, pp. 441-68.
Spanish Friar, *Book of Knowledge* ..	*Book of the Knowledge of All the Kingdoms, Lands and Lordships That Are in the World and the Arms and Devices of Each Land or Lordship of the Kings and Lords who Possess Them.* Written by A Spanish Francisian in the Middle of the Fourteenth Century. Published for the First Time with Notes by Marcos Junenez De La Espada in 1877. Translated and Edited by Sir Clements Markham, K.C.B., Vice-President of the Hakluyt Society. [London, 1912.]
Stefano, Major, *India* ..	Account of the Journey Of Hieronimo Di Santo Stefano, A Genovese, Addressed to Messer Giovan Jacobo Mainer Major, *India*, pp. 1-10.
Sulaimān, Elliot, *History*, I.	Salsilatu-t Tawārīkh of the Merchant Sulaimān, with Additions by Abū Zaidu-l Hasan of Sīrāf, Elliot, *History*, I, pp. 1-11.
Sulaimān, Renaudot, *Ancient Accounts* ..	I. Account, in Renaudot, *Ancient Accounts*, pp. 1-38.
Varthema, *Travels* ..	*The Travels of Ludovico Di Varthema in Egypt, Syria, Arabia Deserta and Arabia Felix, in Persia, India, and Ethiopia,*

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	A.D. 1503 to 1508. Translated from the Original Italian Edition of 1510 with A Preface, by John Winter Jones, Esq., F.A.S., and Edited, with Notes and An Introduction, by George Percy Badger, with A map. [London, Printed For The Hakluyt Society, M.DCCC. LXIII.]
Varthema, *Travels* (Temple).	*The Itinerary of Ludovico di Varthema of Bologna from* 1502 *to* 1508 *As Translated from the Original Italian Edition of* 1510, by John Winter Jones, F.S.A. in 1863 for the Hakluyt Society with A Discourse on Varthema and His Travels in Southern Asia by Sir Richard Carnac Temple, BT.C.B., C.I.E., F.B.A., F.S.A., F.A.S.B. [London, 1928.]
Vasco Da Gama, *The First Voyage*	*A Journal of the First Voyage of Vasco Da Gama*, 1497-1499. Translated and Edited by E. G. Ravenstein, F.R.G.S. [London, Printed for the Hakluyt Society, M.DCCC. XCVIII.]
Vasco Da Gama, *The Three Voyages*	*The Three Voyages of Vasco Da Gama, and His Viceroyalty from the Lendas da India of Gaspar Correa. Accompanied by Original Documents.* Translated from the Portuguese, with Notes and An Introduction, by the Hon. Henry E. J. Stanley. [London, Printed for the Hakluyt Society, M.DCCC.LXIX.]
Wang Ta-Yüan, Rockhill, *Notes, T'oung Pao*, XVI ..	See Rockhill, *Notes, T'oung Pao*, XVI.
Wassāf, Elliot, *History*, III.	Tazjiyatu-l Amsār Wa Tajriyatu-l Āsār of 'Abdu-llah, Wassāf, Elliot, *History*, III, pp. 24-54.
William of Rubruck, *Journey*.	*The Journey of William of Rubruck to the Eastern Parts of the World*, 1253-55, *as Narrated by Himself, with Two Accounts of the Earlier Journey of John of Pian De Carpine.* Translated from the Latin, and Edited with an Introductory Notice

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	by William Woodville Rockhill. [London, Printed for the Hakluyt Society, MDCCCC.]
Zeen-ud-deen *Tahafat-ul-Mujahidin* (Rowlandson)	*Tahafat-ul-Mujahidin, An Historical work in the Arabic Language* by Zeen-ud-deen, Translated by M. J. Rowlandson. [Orient. Tr. Fund, London, 1833.]
Do. [unpublished.]	Do. A New Translation, being prepared by Mr. Mahomed Nayanar, Lecturer in Arabic, Madras University, and the references are to the unpublished manuscripts allowed me for use by the Translator.
	v. *Tradition*
Taylor, *Catalogue Raisonne.*	*A catalogue Raisonne of Oriental Manuscripts in the Government Library* by the Rev. William Taylor. [3 Volumes, Madras, 1857-1862.]
Taylor, *Chronicle* ..	Kongu-dēsha-Rājākkal—Chronicle of the Kings of the Kongu Country, *Madras Journal of Literature and Science*, Vol. XIV, Part I, pp. 1-66.
Taylor, *Oriental Historical Manuscripts* ..	*Oriental Historical Manuscripts, in the Tamil Language.* Translated with Annotations by William Taylor, Missionary. [In Two Volumes, Madras, 1835.]
Wilson, *The Mackenzie Collection*	*Mackenzie Collection. A Descriptive Catalogue of the Oriental Manuscripts and Other Articles Illustrative of the Literature, History, Statistics and Antiquities of the South of India; Collected by the Late Lieut. Col. Colin Mackenzie, Surveyor-General of India by H. H. Wilson,* Esq. [2 vols., Calcutta, 1828.]
	vi. Literary Works
Krishnaswami Ayyangar, *Sources*	*Sources of Vijayanagar History, Selected and Edited for the University* by S. Krishnaswami Ayyangar, M.A. [Madras, 1919.]

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Mērutunga, *Prabandhacintāmaṇi*	*The Prabandhacintāmaṇi or Wishing-stone of Narratives* Composed by Mērutunga Ācārya. Translated from the Original Sanskrit by C. H. Tawney, M.A. [Calcutta, 1901.]
Mērutunga, *Prabandhacintāmaṇi* (Text).	*Prabandhacintāmaṇi. A Romantic History of Several Jain and Other Sovereigns,* Edited with various Readings, Index, etc., by Rāmachandra Dīnānātha. [Bombay, 1888.]
Pattuppāṭṭu ..	*Pattuppāṭṭu Mūlamum Maturaiyāciriyar Pārattuvāci Naccinārkkiniyaruraiyam.* Edited with Notes by Uttamatānapuram V. Swaminatha Iyer. [Madras, 1918.]
Puṟanānūṟu ..	*Puṟanānūṟu Mūlamum Uraiyum.* Edited by Mahāmahōpādhyāya V. Swaminatha Iyer. [Madras, 1923.]
Śēkkiḻār, *Periyapurāṇam* ..	*Śēkkiḻār Nāyanār Aruḷicceyta Periyapurāṇam.* Edited by T. Chentilvelu Mudaliar, [Madras, 1903.]
Tholkāpyam ..	*Tholkāpyam, Porulathikāram with Nachinārkinier's Commentaries (Agathinai* and *Purathinai).* Edited by Rao Bahadur S. Bavanandam Pillai, F.R.H.S., (Lond.) and M.R.A.S. (Lond.) [Madras, 1916.]

vii. Works on Technical Subjects

Short Title	Full Title
Kambar, *Ēreḻupadu* ..	*Makākaviyākia Kambar Vēḷāḷarmērpāḍiya Ēreḻupadu, Tirukkaivaḷakkam.* Edited by V. Sundara Mudaliyar. [Madras, 1910.]
Rājāditya, *Vyavahāragaṇitam*	*Vyavahāragaṇitam* by Rājāditya—Manuscript copy with Mr. H. Sesha Iyengar, Oriental Research Department, Madras University.

viii. Works of Jurists

Short Title	Full Title
Aparārka, *Commentary* ..	*Yājñavālkya Smṛti with the Commentary of Aparārka, Ānandāśrama Sanskrit series,* No. 46, part ii. [Poona, 1904.]

Short Title	Full Title
Mādhavācārya, *Jaiminīyanyāyamālā*	*Ānandāśrama Saṁskṛtagrandhāvaliḥ. Grandhāngaḥ* 24. *Jaiminīyanyāyamālā. Śrī Bukkaṇamahārājāmātyavarēṇa Srī Mādhavācāryēṇa viracitā.* [Poona, 1892.]
Mādhavācārya *Parāśara-Mādhava*	*Bibliotheca Indica. A Collection of Oriental Works. Published by the Asiatic Society of Bengal. , New Series, Nos.* 487, 505, 529, 547, 567, 649, 678, 727. *Parāśara Smṛti (Parāśara Mādhava) with the Gloss of Mādhavācārya.* Edited with Notes by Mahāmahopādhyāya Chandrakānta Tarkālankāra, Professor, Sanskrit College. [3 Vols., Calcutta, 1890-92.]
Manu, *Dharmaśāstra* ..	*Manu Samhita* (English Translation). Published for the Society for the Resuscitation of Indian Literature. Founded by Manmatha Nath Dutt, (Shastri), M.A., [Calcutta, 1909.]
Manu, *Dharmaśāstra* (Text).	*The Dharma Śāstra or the Hindu Law Codes. Text. Vyāsa, Parāśara, Viṣṇu and Manu.* Vol. II. Published for the Society for the Resuscitation of Indian Literature. Founded by Manmatha Nath Dutt (Shāstri), M.A. [Calcutta, 1909.]
Vijñāneśvara, *The Mitākṣarā.*	*The Collections of Hindu Law Texts* (No. 2), Part II. *Yājñavavalkya Smṛti* or *The Institutes of Yājñavalkya Together with the Commentary called the Mitākṣarā* by Śri Vijñānēśvara Book the Second. An English translation with Notes, Explanations, etc., by J. R. Gharpure, B.A., LL.B., (Hon.); Vakil, High Court. [First Edition, Bombay, 1920.]
Vijñānēśvara, *The Mitākṣarā* (Text) ..	*Yādnyavalkyasmṛiti of Yogīshvara Yādnyavalkya with the Commentary Mitākshara of Vidnyāneshvara.* Edited by Wāsudev Laxmaṇ Śāstri Paṇśikar. [Third Edition, Bombay, 1926.]

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	ix. State Papers of A Later Date
Birdwood, *Report*	.. *Report on the Old Records of the India Office with Supplementary Notes and Appendices* by Sir George C.M., Birdwood, M.D., K.C.I.E., C.S.I., LL.D. [London, 1891.]
Ellis, *Replies*	.. *Replies to Seventeen Questions, Proposed by the Government of Fort St. George, Relative to Mirāsi Right; with two Appendices, Elucidatory of the Subject* by F. W. Ellis, Collector of Madras. [Madras, 1918.]
Mirāsi Right	.. *Papers on Mirāsi Right* Selected from the Records of Government and Published by Permission. [Madras, 1862.]
Munro, *Minutes*	.. *Major-General Sir Thomas Munro Bart., K.C.B., Governor of Madras. Selections from His Minutes and Other Official Writings.* Edited with an Introductory Memoir and Notes by Sir Alexander J. Arbuthnot, K.C.S.I., C.I.E. [In Two Volumes, London, 1881.]
The Fifth Report	.. *The Fifth Report from the Select Committee on the Affairs of the East India Company. Madras Presidency.* Vol. II. [London, 1812, Madras, 1883.]

II. LATER WORKS

i. Books

Short Title	Full Title
Acharya, *Dictionary*	.. *A Dictionary of Hindu Architecture* by Prasanna Kumar Acharya, I.E.S. [London, no date.]
Agriculture Year Book	.. *United States Department of Agriculture: Agriculture Year Book* 1923. [Washington, 1924.]
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Yule, *Cathay* ..	*Cathay and the Way Thither, Being A Collection of Mediaeval Notices of China.* Translated and Edited by Colonel Sir Henry Yule, R.E., C.B., K.C.S.I., Corr. Inst. France, (*With A Preliminary Essay on the Intercourse between China and the Western Nations Previous to the Discovery of the Cape Route*). New Edition Revised throughout in the Light of Recent Discoveries by Henri Cordier, D.Litt., Hon. M.R.A.S., Hon. Cor. M.R.G.S., Hon. F.R.S.L. [4 vols, London, Printed for the Hakluyt Society, 1915, 1913, 1914, 1916.]
Yule and Burnell, *Hobson—Jobson* ..	*Hobson-Jobson A Glossary of Colloquial Anglo-Indian Words and Phrases, and of Kindred Terms, Etymological, Historical, Geographical and Discursive* by Col. Henry Yule, R.E., C.B. and A. C. Burnell, Ph.D , C.I.E. New Edition. Edited by William Crooke, B.A. [London, 1903.]

ii. Articles

[The following abbreviations are used below, and in the text, for the Journals in which the articles have been published:—

A.R.	.. *Asiatic Researches.*
A.S.I.	.. *Archaeological Survey of India.*
E. H. R.	.. *Economic History Review.*
G. J.	.. *Geographical Journal.*

Short Title	Full Title
H.M.U.J. ..	*The Half-Yearly Mysore University Journal.*
Ind. Ant. ..	*Indian Antiquary.*
J.A.S.B. ..	*The Journal of the Asiatic Society of Bengal.*
J.B.B.R.A.S. ..	*The Journal of the Bombay Branch of the Royal Asiatic Society.*
J.C.B.R.A.S. ..	*Journal of the China Branch of the Royal Asiatic Society.*
J.I.E. ..	*Journal of Indian Economics.*
J.I.E.S. ..	*Journal of the Indian Economic Society.*
J.I.H. ..	*Journal of Indian History.*
J. M. U. ..	*Journal of the Madras University.*
J.R.A.S. ..	*The Journal of the Royal Asiatic Society.*
Madras Journal ..	*The Madras Journal of Literature and Science.*
Q.J.M.S. ..	*Quarterly Journal of the Mythic Society.*]
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Chandrasekhara Sastri, *Economic Conditions, H.M.U.J.* II ..	*Economic Conditions under the Hoysalas* by S. Chandrasekhara Sastri, M.A. (Department of History, Maharaja's College, Mysore), *H.M.U.J.*, II, pp. 196-233.
Chandrasekhara Sastry, *Hoysala Administration, H.M. U.J.*, III ..	*Hoysala Administration* by S. Chandrasekhara Sastry, M.A. (Department of History, Maharaja's College, Mysore), *H.M.U.J.*, III, pp. 97-127.
Edkins, *Ancient Navigation, J.R.A.S.*, 1886 ..	*Ancient Navigation in the Indian Ocean* by the Rev. Joseph Edkins, D.D., Peking, Honorary Member of Royal Asiatic Society, *J.R.A.S.*, 1886, pp. 1-27.
Elliot, *Tenures, Ind. Ant.*, XV ..	*Ancient Tenures of Land in the Maratha Country* by Sir Walter Elliot, K.C.S.I., F.R.S., *Ind. Ant.*, XV, pp. 267-72.
Fleet, *Epigraphy, Imperial Gazetteer*, II ..	*The Imperial Gazetteer of India. The Indian Empire*, Vol. II. Historical [New Edition, Oxford, 1908] Chapter I Epigraphy by J. F. Fleet, pp. 1-88.
Fleet, *Historical Research, Ind. Ant.*, XXX ..	*The Present Position of Indian Historical Research* by J. F. Fleet, I.C.S. (Retd.), Ph.D., C.I.E., *Ind. Ant.*, XXX, pp. 1-27.
Fleet, *Inscriptions, J.B.B.R. A.S.*, X ..	*A Series of Sanskrit and Old Canarese Inscriptions Relating to the Raṭṭa Chieftains of Saundatti and Belgaum, Copied from the Originals and Edited, with Translations, Notes and Remarks* by J. F. Fleet, Esq., Bo. C. S., *J.B.B.R. A.S.*, X, pp. 167-298.
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Raghaviah, *Economic Organization** ..	*The Economic Organization of the Nellore District under the Hindu Rule* by T. Raghaviah, *Journal of the Madras Economic Association*, (1915?), pp. 31-52. [A Reprint.]
Ramaswami, *Indian Famines*, *Ind. Ant.*, LII ..	*Early History of Indian Famines* by P. N. Ramaswami, B.A., (With an Additional Note by L. M. Anstey), *Ind. Ant.*, LII, pp. 107-13, 145-50, 192-97, 227-44.

[*I am not able to ascertain the exact date of the publication of this article. The copy of the Journal in which it originally appeared is not available to me; I have with me a reprint of the article. Dewan Bahadur T. Raghaviah, C.S.I. has kindly written to me to say that the paper might be dated about the year 1915.]

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Sastry, *Madura Gilds, J.I.E.S.*, V ..	*The Madura Gilds,—A Type* by K. R. R. Sastry, *J.I.E.S.*, V, pp. 128-37 and 183-96.
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Sundaram Pillai, *Miscellaneous Travancore Inscriptions, Ind. Ant.*, XXVI ..	*Miscellaneous Travancore Inscriptions* by the Late Rao Bahadur P. Sundaram Pillai, M.A., M.R.A.S., F.R.H.S., *Ind. Ant.*, XXVI. pp. 141-46.

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